

A STUDY OF SOME ASPECTS OF MANAGERIAL COMMUNICATION

by

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ABSTRACT

This research is concerned with factors which improve or inhibit effective communication between managers in organisations.

An appraisal of the literature is carried out and a framework of the main variables affecting effective communication is suggested. This framework is tested within seven operating companies and the results discussed. Of particular interest is the finding that an individual manager's career achievement is related to the accuracy with which he communicates with his superior. The study also isolates factors affecting this accuracy and shows for example that when subordinates trust their superiors more accurate communication results, while strong desires for promotion reduce accuracy. These secondary variables are then examined to indicate how individual managers and organisations as a whole might improve their communicating effectiveness.

Finally suggestions are made to develop the methods used in the present study and to point out areas which seem worthy of future research.

CHAPTER 1

INTRODUCTION

The subject of communication in business and industry is the focus of a good deal of current interest and discussion. Unfortunately many theories about the complexities of information exchange are sketchy and incomplete. Though much has been written and discussed few of the underlying assumptions have been systematically examined.

While earlier research has examined the complex nature of interpersonal communication by selecting only a few factors for investigation, this study investigates the problems of managerial communication in more detail. By incorporating as many relevant measures as possible into the design, this research presents a more comprehensive picture of the communication process in industry than has previously been available.

The layout of this thesis follows approximately the sequence with which the problem was tackled viz:

- 1) personal experience as a Petroleum Engineer in the Sahara Desert kindled an interest in communication breakdowns and suggested that a study of the problems involved would be highly rewarding . (Chapter 2)
- 2) the literature was reviewed and appraised with a view to forming hypotheses about interpersonal communication. (Part 1)
- 3) a pilot study was carried out to suggest feasible methods of investigating the problems of communication. (Chapter 11)
- 4) from an evaluation of the foregoing work, a list of the hypotheses to be tested was drawn up (Chapter 10) and a method of testing them by questionnaire proposed. (Chapter 11)

5) the major part of the study took place in the electronics industry and produced a number of interesting conclusions concerning managerial communication. (Chapters 12-15)

6) Finally in the light of this work, suggestions are made for improving the methodology and new areas for future research are highlighted. (Chapter 16)

The thesis concludes with a detailed bibliography of the quoted literature and extensive appendices ranging from definitions of the terminology of the communication process to the computer program used to process the data collected.

An economist (Clarkson, 1968) wrote that his profession suffered from an abundance of theory but a dearth of fact - this would also seem to apply to the subject of communication. It is hoped that this thesis helps redress some of the balance.

CHAPTER 2

THE PERSONAL STIMULUS TO THE STUDY

While in industry I became interested in the apparently large number of problems caused by so called "communication breakdowns". During two years as a coal face worker and even more so during three years as a junior manager overseas, it seemed apparent that one cause of the problem was that company objectives were often interpreted differently by individual managers. One of the first management books written reaches similar conclusions when Fayol (1916) writes of a lack of "unity in direction" adversely affecting company efficiency.

Even with this initial impetus to my impressions, I considered that some of the communication problems I had observed as a junior manager might have been due to the unusual organisational position and communication contacts existing in my job. I was employed as an engineer with most of my work (petroleum exploration) carried out in remote locations. The following striking example (which occurred in the middle of the Sahara Desert) may illustrate the situation.

As two drilling rigs had almost completed their current tasks, I contacted my immediate superior (Senior Engineer) by car radio over a distance of 30 miles to ascertain the locations of their next assignments. The Senior Engineer radioed his superior (Chief Engineer) some 300 miles away in the nearest town and was sent a cable instructing the rigs to proceed according to an existing plan recently received from the Head Office in London.

At this stage both the Senior Engineer and myself pointed out (by radio) that the two rigs would cross each other's path if the original plan was adhered to - the two new locations were close to the rigs

present assignment but the original plan called for the rigs more or less to change places, a distance of around 50 miles.

As soon as this point was grasped by the local office, it cabled the London Office explaining the dilemma. The time involved from my initial enquiry was now almost 2 days and the cable to Head Office unfortunately arrived on the weekend. By this time both rigs had completed their tasks and were preparing to move. Tempers were becoming frayed at the delays in obtaining instructions on the drilling locations and also as I subsequently discovered, at the Local Office.

The problem in the Local Office was somewhat different. According to the organisation chart the chain of command was self-contained - from Area General Manager through Section Managers to Departmental Heads such as Chief Engineer. In practice however the Staff Heads in the London Office exerted considerable power on their local engineers. By being in virtual control of their careers (staff were rotated on a two yearly basis at the sole discretion of the Head Office Chiefs), many of the staff preferred to follow their advice rather than that of the local managers. The considerable amount of bypassing which resulted led the local managers to stick to the rules when involved in difficult departmental frictions. In this case, not have received instructions from the Head Office, the Local Office instructed the rigs to move according to plan.

The extra movement involved amounted to some 7 days of lost drilling (at £500 per day). This loss was compounded when the rigs, racing to move as quickly as possible (they were paid a lump sum for moving and not a day rate), met in an area of sanddunes where the only gap was big enough for one rig to pass through at a time. By not

planning to take this into account, the first rig into the gap went on to complete its move in 3 days. The other had to stop at the gap when it discovered that the first rig was already coming through. When this rig attempted to get moving again its 150 tons dug into the soft sand and took an additional two days to get through the gap - the first rig through had had no such trouble by keeping moving over the soft sand and never stopping.

During the next week when the Head Office discovered the mix up, a number of cables were dispatched. Head Office had based its plans on the latest information they had had and claimed that they would have adjusted the plans in the light of the new circumstances. The Local Office retorted that they had asked for advice in good time but whereas they worked 7 days a week, Head Office only worked 5. They went on to ask for responsibility in future to decide rig moves in view of these circumstances. This was refused without reasons.

This example is particularly interesting in that not only is the cost of the communication breakdown highly visible (£3,500 plus) but also because it demonstrates that the causes are often self-reinforcing. It can be argued that the main problem was one of delegation and trust. The outcome did not change the amount of delegation and what trust existed between the participants was decreased thus increasing the chances of future communication breakdowns.

It was with problems like these that I returned to University to search for ways of improving the communication process.

A REVIEW AND APPRAISAL OF THE LITERATURE

CHAPTER 3

GENERAL CONCEPTS

In perusing the literature relevant to industrial communication it soon becomes apparent that the writings stem from a variety of sources. Some authors base their beliefs on concepts derived from laboratory experiments or the academic theories of related disciplines. Yet others write from years of first hand experience in industry, but only a few have based the beliefs on research carried out in on going industrial concerns. As Braden and Trutter (1963) suggest, with much of the popular literature on communication based on so called "common sense", any serious examination of the literature should try to assess its relevance and validity to the industrial scene.

The total field of communication research and opinion, embraces work in electronics, linguistics, anthropology and in a dozen other disciplines. This research is concerned with one part of the field of communication systems, the transmission of ideas and information from one person to another.

Human communication is used to exchange information and opinion, demonstrate and improve status and to express emotions. In an industrial setting Hall (1966) sees three important communication occasions, gathering information for decision making, passing decisions on and attempting to change attitudes.

Seashore (1967) writes:

"without communication there can be no sustained, organised social life. The health and performance of any social system, whether it be an organisation, community, metropolitan area, family or other such unit, depends upon the ease and certainty of communications. There must be transmission and reception of ideas, plans, instructions, values, feelings and purposes."

Perhaps the commonest of the media used is language. In itself language brings benefits in that it can help clarify thought. A young child replied to her father who had scolded her for "speaking out of turn" - "but Daddy, how can I watch what I'm saying until I've seen what I've said?"

This difficulty in visualising words, objects, phases etc. diminishes as an individual's vocabulary increases. Miller (1951) describes experiments which demonstrate that colours become more distinguishable as they are given names. Similarly Arabs have only one word "tilage" for the English equivalents of snow, ice and frost while Eskimos are reputed to have as many as five words for snow alone, each one describing a slightly different kind of snow, recognisable to Eskimos but not to English speakers.

Gestures also can produce communication problems. To a primitive people a handshake may mean "I carry no weapons, my hand is open and not clenched to strike you". Between friends or politicians however, the handshake can mean vastly different things. The meaning attached to this gesture will depend on the frame of reference of the person concerned.

Not only can the significance of gestures vary with the "degree of civilisation" but also with the type of culture. Thus Hall and Whyte (1960) note that Arabs speak in a loud voice when sincere; to them a soft voice indicates weakness and deviousness.

In this brief introduction to the concept of noise in the communication process it may be dangerous to draw the conclusion from the examples above that gestures are more liable to misunderstanding than words.* The expression "I think they got the message", often

* Perhaps Disraeli (1804-1881) expressed this approach best when he said: "Words are just vessels for me to pour meaning into".

implies that the speaker has not been direct in expressing his feelings but instead has purposely pursued a roundabout method to put over his point.

CHAPTER 4

COMMUNICATION PROBLEMS

Before expending much time and effort in a study of industrial communication it seems reasonable to assess the extent of the problem - the task of the chapter.

Practising industrialists have no doubt of the importance of communication in organisations. Fayol (1916) placed "unity of direction" in his seven management principles while Barnard (1951) saw "maintainance of organisational communication" top of his list of three basic executive functions. Perhaps Bavalas and Barrett (1951) expressed this most eloquently when they wrote:

"It is not a secondary or derived aspect of organisation - rather it is the essence of organisational activity and is the basic process out of which all other functions derive."

Growth of Public Interest.

Historically, the need for effective communication in management has been noted since the time of Fayol (ibid) but few specific works on industrial communication occurred before 1940. The first comprehensive book on the subject (Pigors, 1949) with a bibliography of 103 titles had only two references dated before 1940.

The subsequent growth of interest in organisational communication can be attributed to:

- 1) the marked increase in the size of industrial and commercial undertakings since World War 1. These increases have been both numerical (Redfield 1953, Ch. 1) and geographic (Merrihue 1960, Ch. 1).
- 2) the continued specialisation of occupations and the resultant demands for co-ordination (Redfield, ibid).

- 3) the growth of Trade Union power and its requirements for information about all matters affecting its members work or terms of employment. Likert (1967, Ch. 1) and Habbe (1952) take a wider view - that expectations are increasing in democracies such that explanations are being seen as a right and authoritarian instructions are being rejected.
- 4) the growth of national communication networks (radio, television, telephone etc.) forcing co-ordination in and between firms (Cook, 1951).
- 5) the pressures for increasing occupational mobility, cause the recruit to be heavily dependent on the organisation's communication system, if he is to "learn the ropes" as soon as possible (Cook, *ibid*).
- 6) the "information revolution" - through the discoveries and use of automatic information storage and retrieval, the automation of information search and analysis, instant physical transmission of information, semi automatic planning and decision making etc. (Seashore, 1967).
- 7) the belief that all of these trends seem likely to continue.

The Problems Outlined.

This growth of interest in communication has not been due solely to man's inherent curiosity, but also because ineffective communication has been seen as a major industrial problem.

One poll of 650 managers (I.W.M., 1962) put the following problems in their "top five":

- a) insufficient cost information to indicate the best areas for improvement in productivity.
- b) frustration at all managerial levels, due to lack of clearly defined sphere of delegated responsibilities.
- c) poor communication - upwards and downwards.

Many writers define the manager as a person who gets his work done through others (e.g. Drake, 1969), a role which requires clear instructions passed down and the ability to obtain the details of the results created. That this often does not occur is attested by many authors. Ordiorne (1965, p 61) refers to the lack of common awareness of goals. McMurry (1965) sees the head of an organisation nestling on a pyramid of communication barriers, many of which are intended to insulate one level from another, while Dalton (1964, p 234) refers to a "fog of uncertainty" which characterises executive work.

Nor do these problems seem restricted to industry alone. The following comments by Bullock (1953) on a study of nurses, resembles those of many industrial writers:

"A prime factor in any organisational scheme is ease and accuracy of communication both vertically and horizontally. Nursing service, traditionally rigidly disciplined and authoritarian appears in the observed situation to provide little opportunity for communication except for strictly specified types of information in strictly specified channels and in strictly specified fashion. Not only are such channels cumbersome but they are often insufficient. Nurses apparently find it difficult to secure full information about drugs or medications that may be prescribed. Information placed in the charts is often reduced to a minimum set of hieroglyphics, often illegible, standardised for routine custodial care. The development of personalised nursing plans for individual patients would seem to demand that nurses have adequate and pertinent information from appropriate sources. In the situation observed, there appeared to be little communication between units, except via a 'grape vine' route. It was felt that certain aspects of such communication problems may be related to morale level and job satisfaction."

In the broadest sense every difficulty encountered in organisations contains some ingredient of distorted, insufficient or poorly timed information exchange. Communication problems can be the cause and effect of operational or administrative failures, e.g. mistrust can lead to bad communication which in turn intensifies the mistrust.

Having established a frame of reference about the problem, we can proceed to examine research carried out in attempts to measure the

extent of these communication gaps.

Campbell (1952) described 2 factories in which 25% and 66% respectively, of the labour force did not understand the calculation of their bonus awards. The workers in the less well informed factory were consistently more hostile to the incentive scheme and produced less.

In another shop floor communication study Kahn et al (1964, Ch. 5) reported that among the work people studied:

35% worried over lack of clarity about scope and responsibilities
 29% worried over ambiguity of expectations of other departments
 38% worried over lack of adequate information for their job and advancement.

They go on to suggest that this feeling of a lack of downward communication might lead to the withholding of upward communication.

Among office workers Corson (1945) found similar results. In an insurance office 20% of the employees requiring a precise understanding of the operating instructions, displayed varying degrees of misunderstanding of the instructional memorandum.

Even among managers the same gaps occur. Maier et al (1961) studied 58 superior-subordinate pairs to assess their degree of agreement over the details of the subordinates tasks. The results showed that in many ways, the communication gaps among managers, were often considerably wider than with the more routine positions which they controlled. Only on the topic of job duties did the pairs show more agreement than disagreement (46% to 15%). More typically, on the important area of the subordinates' work problems, the pattern was reversed (8% to 68%). These results occurred despite the fact that all four companies involved had written job descriptions and that two of the companies had performance appraisal programs.

These results indicate that communication failures are not limited to periods of major organisational change but can be an every day occurrence. Furthermore, these failures seem to occur at all levels of the organisations and in a variety of contexts. The remainder of this thesis thus concentrates on the question - "How can the communication gaps be narrowed?".

CHAPTER 5TECHNICAL LIMITATIONS ON COMMUNICATION

Before proceeding to an examination of the interpersonal factors affecting communication it seems worth considering first the technological limitations involved.

Distance

Allport and Postman (1947), considering distance in terms of the number of links involved in a communication act, demonstrated how rumours tend to become more inaccurate as the number of links increases - each link being liable to produce some distortion.

Zipf (1949) showed that physical distance can reduce the quantity of communication between two locations. He found that the number of long distance telephone calls between pairs of cities was directly proportional to their populations but inversely proportional to the distance between them. Although cost is a likely factor, it seems reasonable to assume that the extra time involved in connecting distant callers is another factor reducing communication quantity over longer distances.

The work of Zipf was confirmed and extended by Cavanaugh (1950). Replacing the concept of quantity of communication by rate of interaction (in Zipf's terms, number of messages divided by the observation time), Cavanaugh extended Zipf's hypothesis to cover human transportation (residents to hotels, cars to National Parks etc.).

All of these factors would seem to be relevant in planning the layout of a factory or business premises and in establishing a chain of command. Thus Drucker (1955, p 177) writes:

"Every additional administrative level makes the attainment of

common direction and mutual understanding more difficult. Every additional level distorts objectives and misdirects attention. Every link in the chain sets up additional stresses, and creates one more source of inertia, friction and slack."

Although many writers would agree with this statement (e.g. Simon, 1957, p 26-28, A.M.A., 1963, Ch. 16, etc.), few companies have gone to the lengths of I.B.M. in reducing the number of levels in all of their units (see Richardson and Walker, 1948).

Martin (1956) and Whisler (1956) see the effect of the problem as concentrated at the top of an organisation. The top executives have the greatest amount of decision-making power and hence a greater need for information. There may be a tendency for the message flow to them to get increasingly heavy, while they have proportionally less time available to digest the information. In these circumstances they may soon come to depend on briefed-down communication usually interpreted by their assistants. Because of their very position many chief executives may be totally insulated from what is actually going on. Though most directors like to think of a pyramid of communication centres beneath them, a labyrinth of communication barriers might be a more apt description.

Speed

An interesting case in the diffusion of information is the work of Dodd (1953) who had leaflets randomly introduced into isolated communities by air drops. In a series of studies the researcher "planted" information of various kinds and then traced the speed and range of transmission with a corps of on the spot interviewers.

His studies considered the effects of the size of the community (diffusion may be five-times greater in smaller communities than in larger ones with reference to the percentage of residents who ultimately get the message), the potency of messages (information of great interest travels both faster and farther), the time factor (the diffusion rate

risers quickly to a maximum and then diminishes gradually), the space factor (physical proximity to a primary source is the strongest determinant of whether or not a particular person gets the message), and the stimulation factor (it takes a very great increase in initial input of information to get a very small increase in net diffusion).¹

Shannawy (1966) gives an example of industrial relations problems resulting from delayed communication. In her study she found that management-union agreements were taking an average of 2.8 days to reach the shop floor via unions channels, but 12.7 days via formal management lines. Many of the first line supervisors resented this type of information coming to them from their workers rather than their superiors.

What little research has been done, therefore, seems to indicate that speed and accuracy in communication are complementary.²

Communication Frequency

Shartle (1957, p 126) and Mann and Dent (1954) suggest that while frequent communication may not cause better leadership behaviour, reported good leadership behaviour and frequent communication seem to be associated. A person who is communicating with another is receiving recognition and his sense of well-being may be enhanced.

As one of the managers from the present study said:

"Those two are just a couple of empire builders - they know all calls are supposed to come through here so that we can keep tabs on

1 A study by Behrend et al (1969) demonstrated the relevance of this latter factor. Over a 2 year period, samples of the U.K. population had shown little increased understanding of the term "productive agreements" despite its frequent occurrence on the news media over the period in question.

2 Britain's most successful general, the Duke of Wellington (1769-1852) insisted that his commanders should always:

"Do the business of the day in the day."

everything. But no, they keep giving out their office (telephone) number.

I wish they'd give out their home numbers. There's no empire building at night - Oh, no - we get all the calls then of course!"

While one of the two supervisors mentioned above said after putting the telephone down.

"People are always phoning up about this or that. They see this office as the centre of operations."*

A subordinate's well being may not be enhanced however, if he feels that the wall around his boss's office is a mile high. Presumably this is one problem which open plan areas try to reduce by removing the physical barriers of walls.

Other writers (eg. Hoslett, 1951; Etzioni, 1962) think it is a common mistake to imagine that all organisational ailments can be cured by large doses of official communication. Many well publicised "communication improvement" and "management information" programs are ineffective because they overload the formal system.

It would seem that effective organisational functioning depends not upon a maximum but on an optimum of information exchange. The communication studies mentioned already amply illustrate that once a power hierarchy of virtually any kind comes into existence information exchange is no longer "free" but restricted, shaped and controlled. The moment a task is delegated the administrator is to some extent insulated from some important aspects of that task. The point is that

* These quotes from managers involved in the present research have been transcribed verbatim from tape recordings. Other quotes will occur later in the text.

he not only is insulated but should be. Jaques (1951) emphasised that certain barriers to communication frequency are actually necessary if an organisation is to get its business done. He refers to "adaptive segregation" as the automatic process by which barriers are set up more or less by mutual consent by sections or levels of a company to keep channels clear for crucial information.

Despite these barriers Dubin (1962) reported of one top executive:

"In the sheer volume of all activities demanded of him, verbal interaction is the number one form of contact, consuming upward of 80% of all the executive's time ... only 12 times in 35 days of observation was this chief executive able to work undisturbed alone in his office during intervals of 23 minutes or longer."

Similar findings have been reported in America (Cohen et al, 1965), Sweden (Carlson, 1950) and Britain (Burns, 1954).*

From a similar study having managers keep a detailed log of their activities over a period of several weeks, Burns (1967) reports:

"... more important is the picture - the moving picture - such studies give of the management system seen as a communication network. The production of this information itself yields comparative data of considerable interest. For the seven manufacturing concerns, to take one instance, the proportion of all management time spent in spoken communications ran as follows:

80 - 71 - 68 - 56 - 55 - 44 - 42 (percent)

The order is significant. The firms are arranged from left to right also in terms of their ... (success in responding to) ... environmental change. Moreover, the direction of communication changes. In the first firm slightly more than half the communication was lateral ie. with colleagues - and this proportion dropped until, in the seventh firm, virtually all communication was vertical."

Media

In Western society large numbers of people spend a considerable part of their waking hours in on-going organisations. It is not surprising, therefore, to discover that their main communication media

* Many researchers have devised simple methods for gauging communications structure and flow. For greater detail of these random sampling and study techniques see also Nadler (1953); Rubenstein (1953); Whisler (1956) and Davis (1953).

tend to be the same inside or outside the organisation, namely speech, writing, gesture and appearance.

As was pointed out earlier, communications may be described as unsuccessful when the received message does not match the transmitted message. As many of the failures have been discovered in the coding and decoding processes, the media involved have come under careful scrutiny.

One might imagine that language - a system of symbols formalised through education, dictionaries etc. could be expected to transmit messages accurately without any extra organisational help. Many writers would not subscribe to this doctrine. Smith (1961) and Brown (1965) suggest that benefits would be gained by clarifying company terminology through the media of "terminology dictionaries".

Hoslett (1951), however, warns against undue reliance on the written word in the form of bulletins, booklets, magazines etc., in that they can be looked upon as a substitute for face to face communication and not as they should be - an adjunct.

Mehrabian (1966) points out another difficulty in that more than one media may be used at the same time. Depending on their interpretation, they can reinforce or contradict each other. Consider an applicant at a job interview. If he is telling of his keenness to obtain the position but at the same time looks bored and yawns frequently, then the interviewer may find it difficult to reconcile the two sets of symbols.

The whole area of communication through gesture or appearance is fraught with possible errors. Such imprecise meanings exist that perceptual factors can play a large part in the assessment of meaning. These weaknesses can be compounded since gestures and the use of more than one media, are often used to create uncertainty deliberately.

Actions themselves are often looked upon as a method of communication. The managing director who informs all and sundry that foremen are his key managers may have difficulty in having his beliefs accepted by the foremen themselves. If they do their paper work at a space temporarily cleared on a work bench while he has a large office, or if they have to wait for buses in the rain while he is driven past in a chauffeured Rolls Royce, the credibility gap may be difficult to span.

The following quote from the present study exemplifies this:

"Well, the director told me that my project was at the top of his list of priorities. After another few weeks of frustration and no action I went back to remind him. 'Yes', he said, 'your project is still at the top of my list - but the list isn't necessarily in order!'"

Organisational research into the media of communication has tended to concentrate on the merits and drawbacks of written and spoken messages. Thus Baker et al (1949) found low reader interest (6-16%) in the employee handbook of the company studied. Maier et al (1961) found that written job descriptions did not affect the degree of agreement over job details between superior - subordinate managers - firms without this system were rated as highly as firms with it.

Colby and Tiffin (1950), Miller (1951) and Stagner et al (1952) have all demonstrated that interest in company magazines increased as the style became more informal. Where the company literature was "stiff, precise and full of company jargon" employees preferred to obtain their information from personal contacts (liaison people).

Many managers recognise these factors (although it may be argued that few apply them). In a study of 100 company presidents (Merrihue, 1960, Ch. 14), 98 thought the spoken word at least as important as the written word and 40 felt that it was more important.

On the other hand, Higgin and Jessop (1963), pointed out some of

the difficulties which resulted from the use of informal spoken communication in the building industry. They found that many vital pieces of information were committed to memory and that sometimes detail became blurred.

A general criticism which can be levelled at the work of earlier researchers is that their approach to communication problems has been too narrow. Often studies have involved only two or three variables in assumed isolation. The conclusions reached have been used to provide "simple" solutions with "universal" applications.

With this in mind, some of the major drawbacks to written instructions can be given.

- 1) Policies are often secret.
- 2) They cannot be all embracing, and as times change the policies can become outdated and even counter-productive.
- 3) Over a period of time a mass of "red tape" may emerge.
- 4) One circulated instruction does not take into account the reading ability of the individual receivers.
- 5) Feedback is more difficult and delayed.

By contrast the major benefits of written communication are:

- 1) Authoritativeness.
- 2) Accuracy-through being checkable.
- 3) Permanence.
- 4) Coverage - can be reproduced exactly and quickly.
- 5) Retention rate is high.

Before decisions are made as to which media of communication should be used in certain circumstances, the comprehensibility of the terminology to be used should be ascertained. Sinclair (1968) reports a study involving 478 managers from various levels and departments of industry.

He found that only 9.6% of the specialist words and phrases commonly used in industry were satisfactorily understood. A further 14.4% were partly understood, 34.9% were wrongly understood and 41.1% were not known. In terms of levels, Senior Management knew more financial and quality control terms than other levels; Middle Management were marginally more knowledgeable in the field of work measurement. Supervisory Management showed the worst all round knowledge, being inferior to that of non-managerial specialists in diverse fields.

To complicate this picture even more, Gregson (1957) reports a study in which departmental loyalties affected the use of communication media. A large transport office contained a service and technical section, and had a comprehensive information board devised, installed and maintained by the service section. Its use by the employees was not related to its visibility alone but also to the degree to which staff felt allegiance to the board. This in turn varied according to the section they worked for.

CHAPTER 6

PROBLEMS OF TRANSMITTING MESSAGES

Having examined some of the basic benefits and drawbacks of the main communication media and the extent of the problem we proceed to ways of "getting messages across" - improving the transmission and reception of communication. Although the pages which follow are generally thought to concern one person trying to maximise his communication effectiveness with a group of people eg. in a public speech, the comments are equally applicable when communicating to one person only.

Audience Identification

Perhaps the first step in organising one's communication is to identify one's audience - the receivers. To take an extreme example there would seem little point in attempting to entertain a five year old child by discussing quantum mechanics. Thus research by the BBC (1952), has demonstrated that the intellectual capacity of an audience, coupled with the amount of interest they have in the topic being communicated, had a considerable effect on the degree of comprehension of the subject matter.

Many industrial writers (eg. Ronken, 1951), have noted the importance of knowing the intelligence, interests, attitudes and technical jargon of an intended industrial audience. Few however have gone as far as Likert (1954) in suggesting "sample interviewing" as a means of gaining this knowledge.

It seems self evident that the amount of effort applied in identifying an audience should depend, to some degree, on the importance of the intended message. At the same time however, it would seem

rewarding to at least consider the target audience. Even the least important communication has to be received to avoid a complete waste of effort.

Pitch of Communication

Once an audience has been identified, a further factor in successful communication is to pitch the communication (in terms of difficulty, structure etc.) in order to maximise its acceptability to the receiver.

Credibility of the source of information has been shown to be important. Hovland and Weiss (1951) demonstrated how a one sided presentation supposedly from a communist source, was rejected by more of a sample audience than the same one sided presentation supposedly from an American source (the audience was in both cases American). Janis and Fishback (1953) have also shown that an over emphasis of fear raising factors in propaganda likewise increased chances of the message being rejected.

Considerable work has been done in establishing means of measuring the levels of difficulty in understanding communication. From the work of Carrol (1938), who demonstrated that intelligence, age and education were the principle factors involved in assessing vocabulary range, Carrol (1938), Flesch (1943, 1946 and 1948) etc., have suggested practical ways of gauging the ease of understanding of individual communication.

Vaughan (1961) puts it bluntly thus:

"If a person attempting to communicate has not determined what he wants to say, there is little possibility that anyone else will be able to decode the message."

Merrihue (1960) and the A.M.A. (1963) among others suggest that the clearest communicators are those who develop sensitivity to both the viewpoint and the level of comprehension of their audience. Words must be pitched at the correct level and with the right amount of detail

to avoid misunderstandings.

There is evidence that little use is made of the readability scales mentioned above. Tweedie (1969) writes that the Government booklets on its Prices and Incomes policies, using these scales are "very difficult" and "dull". This may be a cause of the comparatively low levels of understanding Behrend et al (1969) found with such terms as "productivity bargain".

For the much pressed manager with little time to spare, a simple test of his "readability" is the degree to which his communication is listened to or read (many a company bulletin goes quickly to the waste paper bin). The manager should assess the degree of interest he can arouse in his audience and the extent to which he gets his message across.

From the foregoing it will be apparent that a communicator cannot rely upon the simple belief that factual communication will be accepted by the receiver. The concept of matching the communication with the intended audience has had considerable "lip service" paid to it in industry but Watkins and Dodd (1938) and Raney (1949) among others suggest that many company magazine failures are due to such miss-matches.

Colby and Tiffin (1950) describe research in which they measured the reading ability of industrial supervisors and related this to their age and educational level. Tiffin and McCormick (1958, p 31) delineated the interests of various target audiences by applying such tests as the Kuder Preference Record (Science Research Associates, Chicago) to random samples. This type of research is providing a base by which communicators, obtaining details from personal files (age, education, aptitude tests etc.) can make more scientific attempts to structure their communication acts.

In general, however, this type of organisational communication

leaves much to be desired. Link (1951) reports that in an analysis of 69 articles selected at random from 13 representative employee papers, 37 (over half) were on a readability level of "difficult" to "very difficult" - levels which are above the capacity of 67% to 95% of the adult population. In a similar study (Farr et al, 1950), a survey of 25 management and 25 union publications for employees showed that, on average, they were pitched at a level of understanding (readability) for employees with high school or college education. In terms of human interest, the majority of both house organs and union newspapers were only "mildly interesting" or "dull" (Flesch, 1948). The authors conclude that both management and union editors alike need to work strenuously toward language simplification. Recent studies by Sinclair (1968) and Tweedie (1969) indicate that this advice has yet to be taken in Britain.

Identifying the Communicator

The communication act is a two way process. Not only does a speaker attempt to identify his audience, but the audience tries to identify the speaker through his communication.*

Busemann (1925) and Baldwin (1942) have analysed written communications and found relationships between emotional stability and such things as the relative frequency of words and word patterns. Little research has been undertaken in industry, although considerable "armchair psychology" may be called into play, when a lunch time chat is commenced with "I wonder what the foreman really meant when he said ..."

* In this vein Ben Johnson (1859-1916) wrote:

"Language most showeth the man; speak that I may see thee."

CHAPTER 7

INTERPERSONAL COMMUNICATION

Chapter 6 can perhaps be best described as planning for one way communication - from the transmitter to the receiver. When two way communication occurs additional factors come into play, factors which are examined in this chapter.

Argyris (1965, p 49) in writing about the self actualization trends of the human personality sees seven basic needs in man. Two of these needs, especially relevant to industrial communication are:

- a) to develop from a state of dependence upon others to relative independence,
- b) to develop from being in a subordinate position in the family and society to aspiring to occupy an equal and or superordinate position relative to peers.

In laboratory and industrial research these needs have been interpreted as aspirations towards two main goals - higher status and greater power. The difficulties in separating these ambitions may be due to the fact that they often go hand in hand especially in industry. However, for the purposes of this review, it may be useful to define the terms now as used in the text.

Status is looked upon as a system of ranking people by some quality, real or perceived.

Power (or influence) is the ability, real or perceived to affect the lives of others.

Status

Kelley (1951) and Thibaut (1950) have demonstrated the adverse effects on group cohesiveness of high achievement desires. In Kelley's

study students took part in laboratory group tasks with artificial status differentials imposed, while in Thibaut's research, boys played games under similar status differentials. Strong individual achievement desires were found to reduce group cohesiveness in both experiments.

Kelley (ibid) and Thibaut (1951) showed that the individuals who wished to move upward in these artificial hierarchies tended to communicate in that direction. These three studies and also those of Back et al (1950), involving rumour transmission in any ongoing community and Lippitt et al (1952), with children's camp groups all confirm the following conclusions.

Upward communication is likely to contain much information which is irrelevant to the task and in terms of total volume is likely to be greater from "lows" to "highs" than the reverse (see also Bales et al 1951). Members of low status groups refrain from expressing pent-up aggressions towards high status individuals. Similarly, information critical of persons in higher level positions is restricted. Low status subjects, given no opportunity to move upward in the hierarchy, communicate more freely than low status subjects who have this opportunity. High status members who are vulnerable to demotion also restrict communication eg. regarding "confusion on the job" and "negative attitudes about their own job".

In general the intention of the subjects seems to be to retain or improve status, the lowering of status being perceived as highly undesirable (see also Taylor and Lewit, 1966). The selective screening of information described above is seen by these researchers as a "psychological substitute" for actual movement upward on the part of aspiring low status members.

Kahn et al (1964) write of conflict being the main outcome along

an achievement-security continuum. Achievement orientated people seek status or expertise, and while these are their prime objectives, they will be deeply involved in their work and their advancements while social associations will take second place. Once these aims have been satisfied to some degree, the opposite will tend to occur and they will tend to suffer less from conflict with the environment by demanding less of it.

In industrial settings as Hartley and Hartley (1952) have pointed out, more or less specific forms of behaviour are prescribed for the contacts between persons at different levels of a hierarchy of status.

"Status systems customarily define the pattern of relationship which govern interaction among group members." (ibid, p 572).

Behaviour roles may be graded with regard to the extent to which role behaviour is determined by consideration of status. Thus the accepted custom of deferring to the "boss" - in tone of voice, in order of entering a room, in a

"thousand other more subtle details of behaviour - is one obvious example of ordering behaviour to status demands" (ibid, p 573).

Roethlisberger and Dickson (1939, p 510) showed that each job in their experimental group carried its own social status or significance. Thus the group in the Bank Wiring Observation Room could be differentiated into five graduations ranging from the highest (inspectors) to the lowest (truckers). White (1948) found similar differentials where workers at a salad station in a restaurant were accorded higher status by fellow employees than those engaged in the preparation of vegetables or fish.

From the foregoing it would seem that status differentials can be accorded at any level of an industrial hierarchy. Viteles (1954, p 325) writes that the status of the job itself - its potential in arousing feelings of pride, worth and recognition - is an important element in

moulding attitudes and in gratifying psychological needs and Veblen (1934) suggests that an existing system of stratification is itself a fundamental source of mobility motivation.

Burns (1954) suggests that the dislike and rejection of subordination, especially in organic working organisations, created some of the discrepancies in job descriptions that he found. Burns and Stalker (1961, Ch. 12) thus suggest that reductions of status differentials will improve industrial communication by breaking down some of these barriers.

Status differentials can apply also to whole departments. The Institute of Works Managers (1962) comment on a poll of their members as follows:

"The relationship between production, design and sales evoked considerable comment: it was suggested that production is not held in the same esteem as the others and sales are allowed too much authority."

While the status of age constitutes a factor over which an organisation has little control, it still can cause problems. Dalton (1950) writes of older line officers disliking what they regarded as instructions from the younger staff officers. Differences in education and the accepted work clothes (suits, overalls etc.) are created conflicts.

Similar problems were reported in a Swedish study (Carlson, 1950). The use of informal systems of address (similar to "du-Sie" in German, "tu-vous" in French etc.), decor and situation of offices and the place and company kept at lunch times, were felt to be the major causes of conflict.

These systems of status were visible in the present study. One of the managers described his plant thus:

"We have four levels of toilet; works, staff, senior staff and top management's toilet with key. We have a similar set up for the canteens and actually the executive dining room has only one official customer as the factory manager is the only manager senior enough to use it. He'd be lonely by himself so he has a selection of people that

eat with him. He tends to favour people from his own section, my section - roughly the same ones that park out front."

A manager from the "other" section commented:

"So I said to my boss, 'We've not got enough people from our section out in the front parking space. It can't be good for morale when none of our senior men park there!' It did some good because I got a space. Now the fellow I replaced has to fight for a place in the staff area and if he's late he'll be out on the cinders with the rest. (Looking out of the window at the pouring rain.) Yes, it'll be no fun for him tonight unless he's got wellingtons.'" (Bursts out laughing.)

On the other hand Stogdill (1949) and Jacobson et al (1951) point to the beneficial results for communication, through the informal associations existing in most organisations - associations often grouped by department or status levels etc.

Scott (1956) takes an uncommitted view and looks at status differentials both as an incentive and as a divisive factor in organisations while Greenman (1968) expressed surprise on overhearing a canteen waitress commenting on a director's frequent company car changes:

"If he wants to swop his car that often, he's entitled to do it. Who wants to see the head of our business going around in a scruffy old car?"

The writer concludes that people, relatively deprived of status are not always adversely affected by the system.

Rosen and Weaver (1960) go further and suggest that among managers with roles primarily defined in terms of job performance, differences in responsibilities and status may be psychologically and motivationally unimportant.

The foregoing pages indicate that the theories on the effects of status differentials are numerous and often contradictory. Some of this confusion may be due to the general use of the word status or to the confused manner in which individual people ascribe status (see for example the international study of Davis, 1927 quoted on p 43).

Power

The effects of desire for advancement on individual communications when status is the main variable are even more clearly seen when power differentials are substituted for prestige or status differentials. Cohen (1958) made this substitution in a replication of Kelley's study (ibid). Group members were dependent upon those above them for advancement. Significantly fewer messages critical of those in high power positions were passed upward by low-power mobile members than by low-power non-mobile members.

Zander et al (1956) report similar findings in their study of professional relationships among mental health teams. They found that low power persons who wished either to advance or improve on their present level communicated less freely to their superiors, and were more likely to tell superiors about their successes than were low power persons with no upward aspirations.

Whereas Bavelas (1951) and Leavitt (1951) stressed centrality* as the important dependent variable for morale in their network experiments, Mulder (1960) and Watson (1965) demonstrated that power was the primary determinant of morale, followed closely by centrality, self-actualisation and activity in the net. The desire for power is seen by these authors as the prime motivator in their experimental groups. The effects of various degrees of influence on group or individual behaviour in network experiments is thus not clearly established in the literature. Turning to students of organisations similar divisions of opinions occur.

Pelz (1951) writes of supervisors even at the same hierarchical level having varying degrees of influence in their respective units and

* This term is described in Chapter 8 when network experiments are reviewed in detail. A simple substitution here might be "at the hub of things".

Kahn et al (1964, Ch. 11) indicate the considerable effect that power and influence can have on the communication process. Thus the superiors by virtue of their position can use direct, unsubtle methods while their subordinates cannot.

While one group of writers advocate that more power should be given to supervisors (eg. Pelz, 1952 and Tannenbaum, 1962) others are in favour of reducing superiors control over subordinates (eg. Ross, 1957).

Lack of power can also bring problems. Pelz (ibid) suggests that superiors who have little power of influence are reacted against by the subordinates. While Katz et al (1950, p 114) postulate that morale can be lowered and performance adversely affected.

Likert (1967, p 134) believes that high producing managers achieve better communication and greater influence than the lower producers. Many examples in the literature (eg. Fenn & Head, 1965) suggest that uninfluential managers are often by-passed by subordinates seeking action from higher, more powerful superiors. The logic of these moves may not be missed by the by-passed manager and the aggravation and annoyance often caused may reduce what communication effectiveness is left. Many managers recognise that this is a problem of loss of face and go to great lengths to avoid this "by-passing" action whether it be upward or downward.

Fenn and Head (ibid) see open door policies, suggestion schemes etc. as by-passing methods commonly used by top management believing that this is good human relations. The writers maintain that these policies often generate suspicion among the by-passed middle management.

Redfield (1953, Ch. 9) poses the question how far can a subordinate go in pointing out his boss's mistakes? - the man often in charge of his progress and salary in the organisation.

Read (1962) took this further when he attempted (unsuccessfully) to uncover a significant negative relationship between communication accuracy and the degree of power or influence the subordinate felt that superior to have. The reasoning behind this hypothesis was that the subordinate would again restrict adverse information to the more powerful superior who could have a greater influence on his future salary of promotional chances.

Theories

From the foregoing research two basic theories have emerged. The "status approximation" theory claims that when "lows" desire upward movement in a hierarchy of status or power, but cannot achieve it, then their communication to the higher status group members can be looked upon as a "psychological substitute" for the upward mobility they have failed to achieve. The second theory regards other upward communication as being "instrumentally oriented", that is aspiring lows attempt to maximise good relations with highs in order to achieve the upward movement they desire. Because of the importance of these theories to this thesis, more examples of research are worthy of consideration.

Hurwitz et al (1953) postulate that upward communication in any social organisation is primarily of a kind which serves to reduce tensions and achieve the purposes of the communicator. Thus in their study of mental hygiene workers, the researchers report that "lows" perceive "highs" as instrumental to their need satisfactions and so "lows" attempt to maximise good relations and minimise feelings of unease in their interactions with "highs". In conferences, the "lows" communicated less frequently than the "highs", and when they did communicate they directed their talk mainly to "highs".

These authors and also Pepitone (1950), showed that persons in low

status positions also engage in facile distortions in their perceptions of their relationships with superiors and generally behave in an "ego-defensive" manner.

The following quote from one of the managers in the study illustrates this point:

"What I really need to get some of my ideas going, is to report directly to the Board, they could see things more clearly."

(This quote was from a 50 year old office supervisor -equivalent to a charge hand who had been at the same level for 25 years. The Board he refers to is of a large company quoted on the stock exchange.)

There is, however, research by Perlmutter and Hymovitch (1954) which has received little attention although it raises some fundamental points about the "instrumental-theory". These workers demonstrated that upward communication may be instrumental yet not always deferential or approval seeking, the context of the communication being of great importance. In an academic setting it was found that students communicated more critical comments to a group of high-power faculty members than to those with less power in a task situation. The authors suggest that in this academic atmosphere critical evaluation rather than agreement or acquiescence was uniquely rewarding. It may also be the case that task orientated comments are more often directed to high power individuals in the hope that suggested changes are adopted - the assumption being that low-power individuals are "powerless" to implement changes even if they agree with them.

Desire for Promotion

The striving for status and power of experimental subjects when translated into organisational terms becomes the desire for promotion. Western society in general admires advancement and rewards it by conferring

both status and power to the successful individual. Veblen (1934, p 31) further suggests that the social stratification resulting from this reward system is itself a fundamental source of mobility motivation.

While research by Leavitt (1951); Mulder (1960) etc. has demonstrated that higher satisfaction can result from high achievement, Cobb et al (1966); May (1950) and Kasl (1966) among others, have found that various forms of advancement striving and certain nervous illnesses were quite strongly related. These findings need not conflict if the nervous illnesses found were associated with individuals who had not achieved their expectations. Thus the gap between aspiration and achievement may be a more relevant factor here than the actual achievement itself.

The writings of Kahn (1964) may provide some insight into these results. He sees the high advancement drive individual forced to risk some of his security in search for promotion. It may therefore be a function of the gap between advancement desire and advancement success which gives rise to the problem of management known colloquially as "ulcer gulch" (Dalton, 1964, p 164). We can expect that the manager desiring promotion may be subjected to some internal stress and prepared to adjust his behaviour and communication in order to satisfy these desires.

In our culture the value placed on achievement and success, particularly in industrial society, is well documented. Argyris (1965) makes a similar point to Veblen (ibid) when he refers to "climbing the organisational ladder" as an adaptive mechanism in reaction to the impact of large scale organisations on individuals (in colloquial terms few people want to be small fish in a big pond). As the same author has pointed out (ibid, p 81), the relationship between advancement aspirations

and problems of upward communication in industrial hierarchies has yet to be systematically examined.

Whyte (1956) in his caricature of the American business executive (the organisation man) notes that the "organisational ladder" constitutes a powerful reward system. For this type of manager, his aspirations for promotion may cause his behaviour to become instrumentally oriented. He may attempt to meet the expectations of his superiors in his on and off the job social behaviour. He may strive to meet their standards and even exceed them in fulfilling his role in the organisation, to maximise his chances for continued approval and hence promotion, and minimise his chances of being overlooked or even demoted. As one manager in this study put it:

"I call it my O.J.A. policy - always be 'one jump ahead' of the boss."

Likewise it can be argued that in communicating work-related matters to his superior the high promotion drive subordinate may structure his communication to his superiors in a way which maximises "positive" and minimises "negative" information about himself. He may therefore be more likely to withhold or restrict communication of the problems with which he is struggling than more positive matters such as the problems he has successfully solved.

Henry (1949) in his analysis of projective test profiles of 300 executives, and Miner and Culver (1955) in a comparative study involving 110 executives, academics and professional people, attest that the most salient single characteristic of executives in industry is the striving for advancement through promotion or the acquisition of more status or power. Adopting concepts of positive and negative motivations, Paul (1969), Jurgenson (1948) and Friedlander and Walton (1964) confirm that promotional opportunities are one of the few factors which operate on

both dimensions of their motivational framework.

Jaques (1951, Ch. 8 and 11) describes many examples in which promotional desire can have an adverse effect on communication effectiveness, especially in what he terms the inverted T group, with the superior soon to leave and several of his subordinates competing for his position.

Read (1962) in the study referred to earlier, demonstrated that subordinates with strong promotional desires tend to "screen" information (on their job problems) to their superior, probably in an attempt to present their superior with a favourably biased picture of themselves.

Warner and Abegglen (1955) in their study of American business leaders have shown that the mobility experiences of executives, particularly executives who have experienced a lengthy "climb" up the occupational ladder, affects their relationships with those above them in the industrial hierarchy. These writers point out that the executive who works up "from the bottom" is relatively isolated socially, has learned to enlist and utilise those who are able to help him in his upward advancement and has learned to insulate and detach himself from those who are not able to further his career.

In Read's study (ibid) he demonstrated the adverse effect of work life mobility on accuracy of upward communication. Intergenerational mobility was however not related. The author writes:

"The status-seeking tendencies of members who have experienced the long climb up the organisational ladder are related to inaccurate communication. One may only speculate on the lack of significant results for the intergenerational aspect of mobility. It may well be that the psychological remoteness of one's familial relationship for those well along in their career lives would make it less strong as a motivating force than either one's conscious need of desire to advance or one's career experiences."

It would seem to be proven from the work of these researchers that strong promotional desire adversely affects upward communication. What

these researches do not tell us is to what degree this desire is inherent in the individual manager or is created by the organisation in which he works.

Trust

"The essence of teamwork is mutual confidence, which, in turn is founded upon the exchange of trustworthy information."

Chairman of Johnston & Johnston.

In this review of the literature this is one of the few principles which has been universally accepted. Kahn et al (1964) writes of conflict as a prime cause in increasing other areas of tension, creating difficulties in communicating and decreasing trust. Higham (1957) also points out that the reception of information is affected by the background of the receiver. For example distortion may occur when the transmitter is disliked or mistrusted. If these feelings are mutual then double distortions are possible in their interpersonal communication. Wiley (1966) noted in a small electronics firm that suspicions were created when the managing director conducted his communications on an individual basis and resisted pressure to have group meetings. These suspicions were further compounded by the preference the managing director was thought to have in lunching with a select band from among the departmental heads. The "outsiders" among the departmental heads suspected that many decisions affecting themselves were taken by this inner clique without their consultation.

These factors are often recognised by managers themselves. In one poll of managers (I.W.M., 1962) output was said to be restricted when lack of trust between directors often caused decisions to be reversed within hours.

Mellinger (1956) found in a large governmental agency that colleagues who felt more trust in each other communicated more frequently and this

in turn led to more consensus of opinion and to more accurate perceptions about the others' views. In the absence of mutual trust, he found that communications tended to exaggerate existing differences and to diminish consensus to such an extent that about a quarter of the subject pairs would have had greater consensus and less distortion of each other's views if they had communicated less, not more.

A study by Ziller (1958) among 96 aircrews, comprising about 1,000 men, found that crews feeling greater "group confidence" were more flexible and had more open communication systems. None of these factors were related to group productivity however.

The study of middle-level managers by the Foundation for Research on Human Behaviour (1959) and Read (1962) confirm these findings i.e. that high trust between their superior-subordinate pairs tended to produce more accurate communication between the pair of managers in question.

Morale

In the involved area of morale and job satisfaction and its relationship to communication the little research which has been done has produced a variety of results.

Stuhr (1962) found morale related to the perceived knowledge of group objectives whereas Perry and Mahoney (1955) and Massarik et al (1953) found morale not related to the actual knowledge of group objectives.

At an interpersonal level however the findings are more related. Work by Stagner et al (1952), Likert (1967, Ch. 4) and Pelz (1951) have all demonstrated that the morale of subordinates was related to the "communicativeness" (the feeling of freedom to communicate with) of their superiors. In an entirely different context Karlsson (1951) found the communication accuracy between spouses was related to their marital satisfaction.

Frames of Reference

In the section on trust Higham (1957) was quoted as saying that the reception of material can be affected by the background of the receiver. This leads us to consider the effects of frames of reference (defined in appendix 51) on interpersonal communication.

Quite apart from the fact that interpersonal communication in organisations may be affected by the withholding or distortion of information, there is the further fact that the information transmitted is often partial or incomplete leaving room for perceptual elaboration. When a communication is initiated to another person, it is generally assumed by the transmitter that the receiver will understand the communication as intended by the transmitter. Some of the errors which can occur in the use of words, gestures etc. have already been examined (Chapter 3), but even when the factual part of a communication is successful, the implications arrived at can be affected by the receiver's own needs, motives and past experiences. Bullock (1953), among others would argue the importance of the organisation in establishing an individual's frames of reference. In observing a modern hospital he comments:

"The nurse group is a key segment within this system, which includes such other groups as doctors, administrators, interns, technicians, patients and visitors. The varied demands, expectations and requirements which these groups impose upon the nurse, mark out a role she is expected to play, functions she is expected to perform, standards she is expected to accept, behaviour codes to which she is expected to conform and a status position of inferiority or superiority relative to the other personnel groups."

Zalkind and Costello (1962) believe that if the expectations of other groups (projected from their own frames of reference) become unrealistic, dangers can occur. For example, Thurley and Hamblin (1964) referred to research in which the stereotyped pictures of a foreman's role (as held by senior and even middle management) had little bearing

on the actual shop floor problems the foremen were experiencing.

Cognitive Distance

Osgood et al (1957) did much of the pioneering work in establishing ways of measuring the degree of similarity between the frames of reference of two individuals. Higham (1957) suggests that when facts conflict with a frame of reference (that is, are cognitively distant), there is an increased tendency for these facts to be rejected and Rodgers and Roethlisberger (1952) speak of "two ideas missing each other in psychological space" when the cognitive distance is sufficiently wide.

Lerner (1953) in a study involving some 300 Turks found that his subjects could be classified by the similarity of their frames of reference into modern, transitional and traditional types. This typecasting was found to be a better predictor of the subject's opinions than any one single measure such as status, country-town dweller etc.

Other research has shown that these groupings can often be affected by culture. Thus Davis (1927) found that children in the U.S.S.R. had a preference for technical and manual professions as opposed to children in the U.S.A. who considered the professions of banker, business man and minister of religion as being of greater importance.

Although many writers have postulated other factors as being important eg. difference in age (Vaughan, 1961) social background, educational level, career background, religious beliefs, etc., (Merrihue, 1960, Ch. 2), little research has been carried out in industry to gauge the importance of these factors, and if they do exist, to plan for them.

The area of main interest concerning industrial frames of reference has been with superiors who previously held their subordinate's position. Two conflicting beliefs arise, the first that the superior with experience of his subordinate's job can continue his active interest in that area

and coupled with his existing knowledge be more in touch. Conversely he can keep less in touch because he feels a need to concentrate more on the new positions under his control. These approaches may also have different effects on the subordinate eg. the subordinate may look down on the manager with less specialised knowledge than himself or dislike the experienced boss whom he sees as "always muscling in on the only job he knows."

Maier has twice carried out research in this area. In one study of 40 managerial pairs (Maier, 1963) he found no significant difference in communication scores between the two categories but in a study of 35 pairs (Foundation for Research on Human Behaviour, 1959, p 23) he found communication was better when the superior had not previously held his subordinate's job. Neither of the two beliefs mentioned above are founded on conceptual research. Perhaps Maier was coming closer to an explanation of his results when he concluded yet another study (Maier, 1961, p 27).

"It is worth noting that lack of information, from their subordinates did not prevent superiors from having ideas about their subordinate's obstacles. Not one superior was reluctant to talk about this area. Superiors obviously perceived their subordinates' problems on the basis of either their own past experiences or what they knew about the organisation in general; therefore they had little chance of agreeing with their subordinates."

More academic work on the distance between frames of reference has been carried out when Triandis (1958, 1959, 1960) and Weaver (1958) first applied the cognitive distance measurements of Osgood et al (1957) in industrial settings. Their general findings were that individual groups of people - engineers, senior managers etc., tended to have similar cognitive profiles and that between any two subjects cognitive similarity was related to their degree of liking for one another and to their perception of their interpersonal communication effectiveness.

The whole area of frames of reference and cognitive distance has suffered from a comparative lack of research in industry.

Empathy

Argyris (1965) writes of the ability to bridge these cognitive gaps, as one of the three basic human skills (empathy, intelligence and motor skill).

Success in imparting information (writes Baker et al, 1949) is affected by a willingness to listen - a give and take arrangement which is the only true basis of participation. Only through listening can a communicator predict and anticipate the internal psychological state of others. Berlo (1960) believes that persons who have this ability should be able, more easily, to take on the roles of others, and so predict their actions more accurately. Whisler and Harper (1962, p 30-39) also subscribe to this theory but point out the difficulties in locating and measuring this talent and thus the difficulties in devising training for its development.

Mead (1934) was one of the first writers to stress the importance of role taking ability in communication. He saw many roles in society and that society often expected different roles from the same person (compare the extract from Bullock 1953, p 42). For successful interaction with people, Mead postulated that man must be able to adopt parts of the others' role to be able to predict responses and so continue the activity.

Rose (1962) tested Mead's theories in a family setting with 46 pairs of related subjects. On the basis that the closer the role to be predicted was to the role of the predictor (shorter cognitive distance), the more successful should that person be in predicting the responses of other members of his family. Most of Mead's predictions were borne out

in that for example, blood relations were more successful than in-laws and subjects of the same sex were more successful than subjects of the opposite sex.

Similar findings have been reported in industry. Thus Dearborn and Simon (1958) demonstrated the effect of departmental indentifications when a group of executives from various departments of a large firm, were asked to read a case study and identify the most pressing problem presented. The executives tended to suggest the problem most related to their own work, thus salesmen mentioned increased sales as the best solution while personnel executives indicated human relations as the key problem. Browne (1950), La Port (1965) and Roethlisberger (1953) report similar findings.

Hoslett (1951) looks upon these problems as being caused by managers, in general, not recognising communication barriers and failing to utilize channels most productively - specifically the failure of the superior to listen to what the subordinate has to say before he offers information, comment or advice. Thus advice or information may be given without full understanding of the issue or problem being presented. (This may also be a part of the accepted power relationship: the superior talks and the subordinate listens). Moreover, there may be a tendency not to listen to the emotional content of what the subordinate is saying, resulting in a failure to understand his feelings on the subject under discussion. When a response indicating no recognition of emotional or "feeling" content is given, and the issue is of real concern to the subordinate, the latter may tend to feel that he has not been fully understood. Ronken (1951) concludes that without this understanding, further communication, in mutually acceptable and useful terms, is likely to be restricted while Roethlisberger (1962, p 28) maintains that "in

handling human relations, logic alone will not avail".

Rogers and Roethlisberger (1952) agree with this reasoning, but strike a note of caution on initiating mass "listening ability" training. They postulate that many people tend to avoid attempting to understand others because:

- a) With understanding may come change in the listener's own philosophies.
- b) Listening attentively to others can heighten emotions - these may be difficult to overcome, especially where the frame of reference of the speaker is vastly different from the listeners. Thus where careful listening is most important it may be least likely to occur.

Even more critical of role playing training is a study by Zalkind and Costello (1962). They report a group of senior medical students who deteriorated in perceptual accuracy after such training. Similarly Whistler and Harper (1962) discovered that a group of psychologists were less able to predict ability from interviews than other professional groups untrained in these techniques.

The relevance of communicating ability to individual managers was demonstrated by Mann and Dent (1954). In an electric power company managers rated "immediately promotable" by higher level managers, were compared with others whose promotional potential was rated lower or negligible. The comparison was in terms of the way the subordinates of these men described their behaviour in confidential questionnaires. Promotable managers and supervisors were described by their subordinates as being more receptive to discussion of job and personal problems and more ready to communicate with subordinates in group meetings in which negative feedback (criticism etc.) could be obtained. The authors conclude:

"The manager's willingness to be accessible to subordinates and

to attend to what is said plays a part not only as a direct link in the communication process but also as an example to others. Effective managers are typically regarded by their subordinates as being informed, open in communication, accessible and receptive. They have personal skills in communication and give a great deal of time and attention to the communication processes among their associates. These are skills and attitudes that **can** be learned."

Lawshe and Bolda (1959) confirmed this belief when they demonstrated that role playing training increased the sensitivity of supervisors to human relations problems.

Individual Performance

Mann and Dent (1954) in a study in an electric power company mentioned earlier found supervisors who created an atmosphere of free and easy discussion (subordinates had been asked how free they felt to discuss job problems), were more likely to be regarded as promotable by their superiors than those who did not create this atmosphere. Likert (1967, Ch. 4) reports similar findings.

Eckerman et al (1962) investigated a brokerage firm with a number of regional offices located in major cities. It was found that official daily information about future programs and anticipated market changes reached some sales offices with a higher speed and reliability than others. Personal sales volume and earnings were higher in those offices where salesmen reported that information flowed freely and speedily. Seashore (1963) found similar results in other sales organisations.

Pace and Simons (1963) and Chapple (1949) have used specialised interviews with measures of interaction rates, listening ability and empathy to select salesmen and hotel supervisors successfully.

Many of these researches have used their subjects' perception of one of their main variables (eg. how free do you feel to communicate with your superior) combined with an objective measure of the other related variable. Karlsson (1951) however in a pioneering study involving

over 400 subjects demonstrated objectively that good marital communication (agreement on role expectations and the amount of joint decision making) was significantly related to marital satisfaction and inversely related to divorce-separation rates.

CHAPTER 8

COMMUNICATION IN GROUPS

In small group studies investigators have emphasized the importance of effective inter member communication for both morale and task achievement. Bavelas (1951) discusses this facet of group study:

"Although the problem of effective communication is an old one, recent trends are bringing it to a new sense of urgency. More and more it is becoming clear that any fundamental advance in social self-understanding must rest upon adequate intercommunication. In areas where effective and highly integrated social effort is required the problem is particularly crucial." (ibid. p 201)

Considerable research on communication in small groups occurred in the nineteen fifties. Studies of "communication nets" and their effect on group functioning, combined with studies on the passage of information within hierarchically structured groups, has represented two major lines of interest. Laboratory investigations of experimentally created hierarchies have provided some crucial insights into the existence and nature of communication patterns.

Even now, however, only a beginning has been made in attempts to isolate factors associated with free versus restrained inter and intra level information exchange, and generalisations have been limited by the necessary artificialities of the laboratory settings.

Network Experiments

In most of the investigations groups of strangers have been placed around specially designed tables which screen them from their neighbours. By allowing only written messages to be used according to certain plans or networks, tasks could be given and completed in a manner allowing a complete record of the interactions to be made.

Early experimental work by Guetzkow and Simon (1955) found that

the relative accuracy in task solving (in order of decreasing accuracy) was wheel, all channel, chain and circle shown in the diagram below.

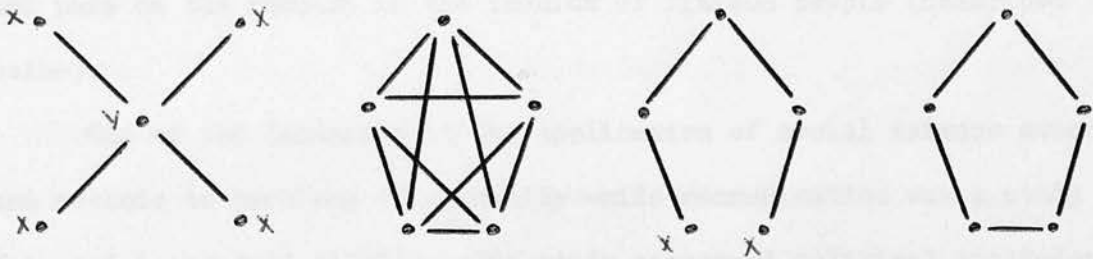


Figure 8.1

Leadership was found to be associated with centrality - eg. position Y in the wheel net (Leavitt, 1951; Shaw et al, 1956; Bavelas and Barrett, 1951) while low morale and satisfaction were found to be associated with peripherality - position X in the wheel and chain nets (Bavelas and Barrett, 1951; Watson, 1965).

Heise and Miller (1951) verified the hypothesis that "noise" on the channels increased errors and lowered efficiency on all channels. Macy (1953) produced similar results in experiments with two groups - one with "solid" colour marbles and the test group with "streaked" marbles. Until the test group developed its own technical language its performance was below that of the reference group.

Much of the foregoing research was superseded by the more extensive experiments of Cohen (1962) and Carzo (1962). These researchers demonstrated that the groups in all the networks tested above continued to learn over longer periods than the earlier studies had investigated. Efficiency tended to a common level but the morale associated with the various network positions remained the same.

Liaison People

Simultaneously with the research into experimentally created groups, other workers were looking at communication flow in ongoing groups. For example Festinger et al (1948) and Back et al (1950) demonstrated the



importance of opinion leaders in a study of rumour transmission on a housing estate. The individuals tended to use their friends to receive and pass on the rumours in the fashion of liaison people (described below).

One of the landmarks in the application of social science concepts and methods to problems of community-wide communication was a study by Katz and Lazarsfeld (1955). The study concerned political attitudes and voting behaviour in a small American city, but the conclusions have broad applications in business organisations. In their effort to discover how the residents got information and what sources of information were effective in influencing political behaviour, they came to the conclusion that the mass media, although important, had their effects largely through the activation of complex informal interpersonal communication processes (eg. more time was spent talking about radio reports than actually listening to them, see Lazarsfeld et al, 1948).

To explain the development of attitudes, opinions and behavioural patterns, they came to the view that the community was partially structured into primary groups, formed of people who interacted on a person-to-person basis. For many kinds of information intake and out-flow these primary groups relied upon one or more opinion leaders: these opinion leaders were very active communicators who were responsive to the mass media and had connections with other opinion leaders and with persons who were influential in the community. There was accordingly a "two-step flow of communication" (Katz, 1957), first from the source to the opinion leaders, and through them by person-to-person transmission to the less active members of the community. The transmission of information and the meanings and implications derived, were very much influenced by the group norms of the primary groups and by the tendency

towards consensus within primary groups.

The Grapevine

It is clear that the conceptual picture of communication flow in the larger communities described above is analogous in many respects to communication flow in industrial organisations. Official and controlled communication channels - via mass media, memorandum etc. - convey information to only a small part of the target audience. The content transmitted is often incomplete so that there is latitude for misinterpretation as well as for selective attention and unintended elaborations of meaning.

Many writers (eg. Merrihue, 1960, Ch. 3.; Baker et al, 1949) have noted that the structure of rumour transmission seems to be similar to its industrial counterpart - the grapevine. It has also been suggested (A.M.A., 1963, Ch. 14) that the liaison people in the flow pattern occupy these positions through above average interest in their work and in all factors which might affect it.

Although sociometric methods have been used to identify these people (Ross and Harary, 1955; Weiss and Jacobson, 1955), proposals to incorporate the liaison people into the formal communication systems has received little attention in the literature.

Communication Linkages

One approach to the description and assessment of information flow in organisations is represented by a study of communication linkages among professional staff members of a government agency (Weiss and Jacobson, 1955 and Weiss, 1954). This agency included a number of military and civilian scientists responsible for the administration of a rather large program of science development. The study aimed to learn about the patterning of communication between persons. Reports were

obtained from each member about the frequency of his personal contacts (information exchange) with each other member of the agency. Pairs independently reporting their mutual frequency were taken as the basic data and these pairs were analysed to see whether and how there might exist sets, or groups, of members who communicate a great deal with each other and rather little with people not part of their set. Thus, a communication structure of the organisation could be discerned for comparison with the "formal structure". Some results were:

- 1) There were in fact rather clearly defined sets of members (called primary groups) who communicated largely with one another and these sets were typically rather small, groups of 5 to 8 being most common.
- 2) Each set had at least one liaison person who communicated much more than his colleagues and who also had an exceptionally high rate of communication with liaison persons from other sets.
- 3) These liaison persons were sometimes, but not always, those designated as supervisors or managers.
- 4) There were some people, isolates, who did not belong to any primary group and who were largely excluded from information sources.
- 5) The primary groups tended to match the formal organisation plan, but the match was imperfect and some primary groups cut across organisational lines to include people under different supervisors.

It was clear from interviews with these people that some of them were aware of the informal communication system and that they relied upon it very much as a means for obtaining, transmitting and evaluating information needed in connection with their work. Some intentionally used it whenever they thought the official communication system would be too unreliable or too slow.

In another study Davis (1953) illustrated one of the ways in which

communication flow may be studied. He traced the transmission of specific items of information throughout the organisation of a manufacturing firm, with attention to their point of origin, their chains and networks of transmission, the speed of communication in different chains and networks, and points of blockage of communication. Among other things in this particular firm, he found:

- 1) At every level of the organisation except the very top there are some groups of members who are generally isolated from the flow of information and who get information very late or not at all.
- 2) The formal mechanisms for communication (meetings, written messages etc.) were slower and more often resulted in incomplete transmission.
- 3) Communication via personal, informal, face-to-face verbal exchanges occurs more frequently and faster than communication via more formal mechanisms.
- 4) In this organisation there was a severe blockage between the fourth and fifth levels (from the top in a six-level organisation) such that only a fraction of information items passed this hierarchical barrier.
- 5) More than half of the information items traced reached their destinations by crossing over organisational lines rather than flowing through the intended formal lines.
- 6) A unit of information was much more likely to flow downward than upward from any point of origin that allowed two directional flow.

Davis concludes from this study that the "grapevine" is much more important in organisational communication than some have believed and that much of the necessary and important communication moves in this way. He observed also that people in staff positions generally received more information and received it earlier than did their colleagues of similar

rank in the line positions. Zajonc and Wolfe (1966) report similar findings.

Great quantities of relevant and important information are excluded from formal communication systems, indeed it is doubtful whether any organisation could function when communication occurred solely through a formal system - overload and failure could result.

Fortunately social organisations are adaptive and readily create means for supplementing formal management information flow systems - commonly called the "grapevine". When described in the language of the social scientist, the grapevine appears to be a necessary and almost wholly beneficial thing, consisting essentially of a complex lateral network of contacts between liaison persons, adapting to the changing needs of its users. The special information generation and flow functions are those of assuring accurate translation of formal communication into the meanings relevant for different kinds of members in different parts of the organisation. We notice the grapevine when it generates false or unrealistic information. We may overlook the same grapevine when it is doing its normal and necessary work of converting information into more useful forms and into needed derivative forms. We may not realise how much we rely upon it when rapid communication is vital and when advance notice is needed about impending formal communication. (See also Burns, 1954; Donald, 1959; Katz, 1957; Festinger and Thibaut, 1951)

Group Pressures

Turning to the effects of group pressures on communication the work of Kelley and Woodruff (1956) has demonstrated that an individual's perception of having an opinion conflicting with that of his group can cause that individual to modify his opinion. The subjects of their

research listened to a recorded speech (applauded by a fictitious audience) indicating rejection of many of the beliefs of the subjects (young teachers). Subjects who were told that the applauding "audience" had a similar background to their own adjusted their beliefs (in response to the speech), more than a twin group of young teachers who were told that they had less in common with the fictitious audience (supposedly a variety of young graduates).

Concluding similar research Spitzer (1964) writes:

"The more the individual felt that his beliefs were counter norm to his own 'group' norms, the more he changed his opinions in the direction of the group norm."

Deutsch (1950) comments that what holds members of such groups together is their social cohesion or more accurately, their ability to transmit relevant messages more accurately to each other than to anyone else.

In a study by Back (1951) groups of strangers were given tasks to perform in a laboratory setting. Although all the groups were randomly selected, certain ones were informed that they had been specially brought together because of some similarities in their backgrounds and these groups were termed the more cohesive groups. The research found that the more cohesive the group, the more communication was directed to obtain consensus.

Similar results were obtained by Festinger and Thibaut (1951) and Schacter (1951). In their studies some of the subjects were given different information from the main group and hence had the initial tendency to suggest a different solution. The more homogeneous the group (cohesive in Back's terminology) the more communication was directed at the deviant to obtain a change in his solution towards that group consensus.

From this and other research Festinger (1950) has drawn up some theories to cover group pressures in communication:

1. Pressure toward consensus is caused by
 - a) social reality - when physical reality (factual information) is low, group pressures can be strong
 - b) group locomotion - the need to progress, as a group, towards a common goal.
2. The resulting quantity of communication to create consensus
 - a) increases the greater the perceived discrepancy
 - b) increases the greater the perceived importance of the discrepancy
 - c) increases the greater the group cohesiveness
 - d) increases toward the deviants
 - e) increases when a reduction in deviation is expected
 - f) decreased towards persons perceived out with the group or not wanted in the group.
3. The amount of change in opinions
 - a) increases with consensual pressure
 - b) increases with group cohesiveness
 - c) decreases when the recipient knows of other groups holding his present beliefs.
4. The tendency to reject members
 - a) increases with the perceived discrepancy
 - b) increases with group cohesiveness
 - c) increases with the relevance of the issue.

In the examination of the information systems of an organisation many social scientists attempt first to identify social groupings. From the research reviewed it appears realistic for some purposes to view a business organisation as a collection of small social groups of overlapping

membership, rather than to view it as a set of individuals linked by lines of authority and responsibility. The analysis of information generation and flow throughout the organisation can be aided by the considering of groups as the main units comprised by the organisation and by consideration of individual behaviour as an expression in part of group processes.

Likert (1967, Ch. 2 and 3) agrees with these observations and suggests that the manager needs to choose his methods and strategies in formal communication with some consideration for the existing and desired group structure of his organisation and with some consideration for existing group differences. He may use group processes to aid effective communication by encouraging the formation of appropriate new groups, by accepting as legitimate the added consensus arising from group interaction, and by utilising group processes in his own immediate work setting with subordinates, colleagues and superiors.

CHAPTER 9

IMPROVING ORGANISATIONAL COMMUNICATION

The final chapter in this review of the literature summarises the approaches which have been made to improve organisational communication. Although the different approaches are widely applied in industry, few have been subjected to rigorous examination, their adoption or rejection seems more often dependent on the subjective judgements of the top management involved.

Defining Company Policy

It is generally assumed that a person will be a more effective member of an organisation if he has a knowledge of the purpose of the organisation and its operations (see for example Shartle, 1957 and Brown, 1963, p 48). Such knowledge should help a person to understand his role better and also to appraise his own performance and the performance of others more readily.

Bullock (1952) found in a hospital that the lack of explanations or information regarding personnel policies, promotions and salary increases were occasionally mentioned (by nurses) as irritating and conducive to snooping and suspicion. Baker et al (1949) and Thurley and Hamblin (1964) write of a similar lack of knowledge in industrial settings.

Pelz (1959) studied the flow of information in an electronic manufacturing firm by testing employees knowledge of company policies. Differences in test scores were uncovered in different parts of the company such that job performance was better on an individual and group basis where the knowledge of the policies was better.

It may be that managing directors have a general reluctance to

establish clear policies (see eg. Carlson, 1950), in case this action reduces their flexibility in the future.*

Defining Responsibilities

Brown (1965, p 111) writes:

"When a subordinate is newly appointed to a job, he should, if he has been adequately trained, know a good deal about the general policies on which the operation of the company is based, but he will not know the detailed policies of his new manager. He needs, at this stage, a rapid and decisive introduction to and familiarity with those detailed terms of reference which constitute much of the prescribed content of his new job.

It is essential to give an explicit statement of the situation at the beginning if unnecessary problems are to be avoided. Newly appointed managers often tend to refrain, if possible, from asking many questions, because they feel that, if they do, they will give the impression that they are not able to fill the position or because they want to make an immediate demonstration of their competence by doing the job without guidance."

Odiorne (1967) would seem to agree, in that he writes that the essence of management success is the achievement of results in an area of responsibility.

He goes on to give an actual example of the problems caused when responsibilities are not defined:

"General foreman Jones considers foreman Smith responsible for certain maintainance functions in the department of which Smith is production foreman. These responsibilities include:

- (a) Reporting defective equipment promptly to maintainance.
- (b) Investigating all breakdowns and reporting improper maintainance which leads to breakdown.
- (c) Making the decision to release equipment for repair when requested by a mechanic.

* The following quotation is often used to emphasise this point of view:

"The moving finger writes,
And having writ, moves on,
Nor all thy piety, nor wit
Shall lure it back to cancel half a line
Nor all thy tears wash out a word of it."

Omar Khayam (1050-1123)

- (d) When a breakdown occurs, finding out the cause, how long it will take to repair the machine, and assign operators elsewhere if it is estimated to be over 15 minutes.
- (e) Investigating every charge of operator negligence leading to machine down-time and to take corrective action to prevent a recurrence.

Foreman Smith reports that he 'has no responsibility for maintenance'. He does none of the above things. He feels no sense of short-coming since he doesn't realise that these are his responsibilities. Smith explains this short-coming as follows, 'After all, the mechanics don't report to me, they have their own boss'.

If, as is often the case, general foreman Jones never actually gets around to discussing the specific aspects of the job, but is guided in his appraisal of Smith by a checklist of personality traits, the unfortunate subordinate may never learn what his job actually consists of."

It would seem that this failure is quite common in British Industry as a poll of works managers (I.W.M., 1962) placed "frustration at all management levels, due to lack of clearly defined spheres of delegated responsibilities", fourth in a list of factors limiting productivity.

This is also confirmed by Blake and Mouton (1964) who suggest that many managers have the attitude to their new subordinates of "throwing him into the thick of things". One manager in the present study used almost the same words:

"I was just flung into the deep end. Mind you it is the quickest way to learn - sink or swim!"

It is also important to ensure that any clarification of responsibility is directed to the person able to affect the outcome for as another manager in the study complained:

"We have full responsibility to draw up the route cards for each lorry so the drivers don't check them at the start of their shift. If there's been a mistake, they'll come back at the end of the day, still half loaded, without a care in the world, and hand us back our mistakes. It is too late for us to do anything then."

More objective work was carried out by Dent and Mann (1954) when they studied the accounting section of an Electric Power Company. In

this study individual and group performance was found to be related to the individual's knowledge of his responsibilities. Rogers (1957) reports a laboratory study with 14 superior-subordinate pairs, and Harrison (1959) carried out a study with 59 similar pairs at overhaul shops in a Naval Air Station. In each case subordinates who more accurately predicted what their superiors expected of them tended to be given high rankings on job performance.

On the other hand, Meyer (1959) in a similar study with 51 foreman/manager pairs found no such correlation and Maier et al (1961) found no improvements in agreement on the subordinates role through the use of written job descriptions. He concludes:

"Job descriptions may be adequate for long term, relatively permanent matters, but they are less than adequate for dealing with situations which are constantly changing."

Many of these apparently conflicting findings may stem from the grouping of all types of communication together. Work by Kahn et al (1964, Ch. 5) has made the first step in separating work orientated communication from welfare orientated communication. In their study they found 38% of their subjects received inadequate information on advancement training prospects. The more recent work of Herzberg, 1968; Paul, 1969; Lawler and Porter, 1968; and Friedlander and Walton, 1964 is beginning to put these findings in a conceptual context by a similar separation of motivation into positive and negative.

Clarifying Performance Targets

Once the details of an individual's responsibilities and duties have been defined it would seem a logical step to find some way of assessing the person's degree of success in carrying out his duties - in other words, assessing his performance.

Wikstrom (1966) and Ordiorne (1967) point out that "management

for results" has often failed through the targets being imprecise eg. produce at minimum cost instead of a precise target - reduce production costs by 5% within 6 months. These writers also suggest that precise standards, objective in the eyes of both superiors and subordinates, can reduce the amount of subjective criticism often occurring between superior/subordinate managers.

However, even if clearer performance goals have been established, co-ordination between related functions may be necessary. Thurley and Hamblin (1964) illustrate a case in point. In examining the inspection function of a manufacturing firm they found that the aims of the supervisors on the three shifts involved were different:

Shift A raised production rates by cutting down on rejecting units.

Shift B concentrated on quality by rejecting even border line cases.

Shift C was permissive and allowed individual foremen to follow their own inclinations.

The authors conclude that the overall result was one of erratic quality, which could be stabilised by the establishing of overall objectives common to each shift.

Furthermore the introduction of clear but slack targets, with little incentive to improve on them, can produce additional problems as a manager from the present research attests:

"Those bright boys upstairs with their targets and deadlines! They sent a circular to all the customers saying orders for delivery the next day should be in by 1.30 p.m. Now hardly anyone sends them in before that and we're going around like !!! - trying to cope with the last minute rush."

Feedback

As has been continually emphasised in this thesis, communication is a two way process. After passing a message a transmitter looks for

some reaction in the receiver - some feedback. It is from this feedback that the transmitter decides how to frame or pitch his next communication act. Only through feedback can an individual build up a picture of the receiver's attitudes and from this picture predict future responses (role play).

The effect of feedback on task performance has been demonstrated by Leavitt and Mueller (1951). In their laboratory study four groups of students were required to assemble a design of rectangles from a verbal description given by the researchers. The four groups were differentiated by the degree of feedback they were allowed with the instructor. Summarising their results, the following essentials were discovered:

- 1) Increased feedback increased accuracy.
- 2) Increased feedback increased the time involved initially, but eventually similar times to zero feedback trials were obtained.
- 3) Zero feedback engenders hostility in the transmitter.
- 4) Zero feedback engenders doubt in the transmitter.

Similar results were reported by Zajonc (1962) in a laboratory study of 20 groups with 7 subjects in each. The experiment involved the reaction time in depressing a key after receiving a set stimulus. A red light would flash if failure (slow reaction) occurred. Performance was found to be best when feedback was at a maximum - in this case information could be fed back to the subject on his own performance, his group's performance and the performance of the other group members. The subjects with slow reaction times improved their performance most quickly under conditions of maximum feedback.

Not only does factual feedback have measurable effects but also perceptual feedback has been shown to change attitudes. Spector (1954)

devised an experiment whereby the same poorly delivered lecture was given to different groups of subjects. After 15 minutes, the groups were asked to write down suggestions to help improve the lecturer's technique. One group was then told that their suggestions had been accepted, one that their suggestions had been seen but rejected, and another that the suggestions had not been read or accepted. The lecturer then carried on exactly as before - in the same poor style - to all groups. Before - after attitudinal questionnaires found that the group "allowed" to feedback advice felt (wrongly in fact) that the lecture had improved in style more than either of the other two groups.

Most writers on industry would argue that, in general, a clearer picture of responsibilities, difficulties, strong points and weak points of both superior and subordinate should result from an open feedback system.

Odiome (1965, Ch. 12) maintains that prompt feedback on performance is more important in changing behaviour than intensive discussions occurring infrequently. Further more, March and Simon (1966, p 185) claim that a human need is satisfied when personnel are informed of their progress and that this effectiveness is governed by the clearness of the performance targets and the accuracy with which they can be measured.

Many writers would agree with this and McMurry (1965) and Kallejian et al (1953) point out that performance feedback based on subjective judgements are often more a mirror of the appraiser ~~and~~ than the appraisee as the following example shows:

"This officer is keenly analytical and his highly developed mentality could best be used in the Research and Development field. He lacks common sense." Whisler and Harper (1962).

The supporters of feedback through performance appraisal

(eg. Planty and Efferson, 1951), reject the approach typified by the following manager from the present study:

"If subordinates are good men, they will make an objective judgement of their own progress - they don't need me to tell them. We all work on the basis here that no news is good news."

The lack of feedback seems quite common in Britain. A lack of cost information for instance was placed third in a list of problems restricting productivity during a poll of works managers (I.W.M., 1962).

Performance Appraisals

One of the earliest recorded applications of formal appraisals was in the Wei Dynasty (221-265 A.D.) where the Imperial Rater of the Emperor appraised the performance of the members of the official family. American industry started taking up formal appraisals before World War I, but the system is still little used in Britain (P.E.P. 1966).

Benefits claimed for the system are:

- a) The identification and concentration upon the most important areas.
- b) Subsequent appraisals identify weak areas and allow corrections to be attempted.
- c) A record of the conclusions reached is permanently on paper.
- d) Face to face communications increase speed and interaction.
- e) The motivation of managers through relating reward to performance (Heyel, 1958).

More recently other writers (Whistler and Harper, 1962; Humble, 1967; Rowe, 1964 etc.) have highlighted some drawbacks of appraisal systems in common use. These authors suggest that the power relationship of the dialogue is of paramount importance, such that both superior and subordinate should play their roles with equal openness and frankness, establishing clear targets of performance to which both superior and subordinate are committed (see Cock and French, 1948).

Similar beliefs lead to the recommendation for the separation of performance and reward, ie. to look upon appraisals as a tool for career development with the superior committed to follow up weaknesses exposed in the process, by giving time or training to correct the weakness.

Not only can subordinates experience difficulty in being critical of their more influential superiors but also superiors can be reluctant to criticise as the following quote from a manager involved in the present research indicates:

"Some of my subordinates may complain about some people all the year round but when it comes to appraisal time they tend to say, 'Oh, they're a lot better recently.' They are very reluctant to criticise or act the Headmaster."

Maier et al (1961) suggest that the lack of agreement they found between superior-subordinate pairs over job details, questions the validity of appraisals and the willingness of the subordinate to accept this system. None of the companies studied by these researchers used participative appraisals.

Kay et al (1965), Meyer et al (1965) and French et al (1966), confirm this belief. In a study of 92 superior-subordinate pairs at a General Electric plant the authors found:

- a) Criticism had a negative effect on goal achievement (see also Rothaus et al, 1965).
- b) Praise had no effect.
- c) Performance improved as targets became clearer, more specific and realistic (see also Rothaus et al, 1962 and Willerman, 1943).
- d) Performance improved with more frequent feedback (see also Zander and Gyr, 1955).
- e) Mutual goal setting improved performance (see also Coch and Franch, 1948; Clingenpeel, 1962; Mann, 1951 and Hariton, 1951).
- f) Performance interviews should be separate from salary and promotions

decisions (see also Rowe, 1964; Humble, 1967).

Morale and acceptance of performance appraisal also improved in the same manner (see also Kirk, 1962, 1963). In general these authors suggest that the interview should attempt to decrease the sense of threat to the subordinate's self esteem and so reduce his defensive behaviour.

It is perhaps the uncertainty about the way in which performance is assessed which causes most ambiguity in appraisal interviews. Kahn et al (1964), Rothaus et al (1965), Webster and Winn (1951) and Willerman (1943), all conclude that goal orientated assessments produce more agreement, satisfaction, feelings of adequacy, less hostility and more feelings of responsibility than trait orientated assessments for both subordinate and superior roles. Perhaps the greatest reward from establishing objective as opposed to subjective appraisals is that interpersonal relations can be improved and greater commitment of the subordinate to group objectives is possible.

In a study of 567 American Companies, Spriegel (1962) found a growth in the practise of performance appraisal. 50% of the firms had, however, eventually dropped the system at executive level because they felt it was too time consuming. Furthermore it is interesting to note in the light of the foregoing research on participation, that over half of the firms using performance appraisal did not involve the subordinate at all, while only 8 firms involved, 3 levels of management - subordinate, superior and his superior - in participative discussion. These figures and tendencies seem even more valid to British Industry (P.E.P. 1966, p 53).

Suggestion Schemes

Fenn and Head (1964) see formal upward communication as the minimum required by the system in operation. The resulting amount and nature of informal communication is looked upon by these writers as direct reflection

of the unfulfilled needs, desires or goals of the people involved. By using informal communication, the subordinate can:

- 1) initiate the communication,
- 2) control the process,
- 3) seek the best channel.

The authors suggest that all formal feedback methods should be tested by these three parameters. Thus meetings usually fail on all three counts while suggestion schemes are somewhat better in that the first factor is met. Personal contact is seen as the best method but only when the superior has a grasp of interviewing techniques.

Similar faults in suggestion schemes, opinion polls etc., have been documented by other writers (Young, 1965; McMurry, 1965; Pigors and Myers, 1952, p 459 etc.) and certainly failure rates can be as high as 90% (Alger, 1946).

Whereas the Socony Mobile Company computed an 800% return on their suggestion scheme (Auvil and Cassell, 1959) other writers have put forward the following disadvantages.

- a) Many companies pay on all suggestions to avoid disappointment.
- b) Many suggestions would have come without the scheme.
- c) There is no evidence that morale is improved.
- d) Turning down suggestions can lower morale.
- e) The result of these schemes is a by-passing of supervisory levels and can create suspicion both among managers and union officials.
- f) Staff personnel excluded from the schemes may pass their suggestions up through eligible workers instead of their superior (see Pigors and Myers, 1952, p 340). This latter point is illustrated by the following quote from one of the managers involved in the present study:

"There is no encouragement from top management for suggestions so I pass my ideas onto other interested people - like you - work study people etc. They get them implemented because they can get to the right ears and then they get the credit, not me."

Davis (1953) writes of the "open door" policy as an attempt to bypass levels of supervision presumably in the belief that communication blocks are occurring among the bypassed managers - an attitude not likely to improve morale among the bypassed supervisors.

Another possible problem with an "open door" policy is that the manager's office, even with its door open or in open-plan is still his territory. Zoologist Morris (1969, Ch. 5) would suggest that for the subordinate to leave his own territory and come to the boss's "lair" is often itself a sign of submission and perhaps not the best start to establishing "free open communication" - so often the stated aim of these types of policies. As another manager from the study explained it:

"I try to have an open door policy. It takes a lot of time but its the only way of keeping trouble down. Mind you, some fellows I have never seen in this office but I'll be in the yard and they will talk to me there - on their own ground as it were."

It would seem that for all the schemes mentioned in this chapter, the ultimate success or failure may depend upon the degree of trust and confidence existing between the participants. Thus any scheme adopted could be judged to a considerable degree upon the "net growth" of trust and confidence that it generates.

Management by Objectives

Of the literature concerning organisational techniques to improve communication and performance, the philosophy which seems to be based most closely on the research already reviewed is that of Management by Objectives.

Briefly the theory of Management by Objectives involves the setting of specific performance targets to be achieved in a given time. The

targets may be set for the entire organisation, or for any part of it. The setting of the objectives ideally involves a superior and subordinate jointly, and at the end of the time period, both examine the subordinate's performance in terms of the extent to which the objectives have been achieved. If possible, the objectives should be quantified.

The benefits expected from the introduction of the system are, of course, greater efficiency. More specifically:

- a) The operation of the system will identify, and concentrate attention upon, the most important elements of the manager's job.
- b) The subsequent appraisal of performance will identify and enable the correction of factors which have impeded the attainment of the objectives.
- c) The motivation of managers will be increased by their participation in target setting.

A crucial question for the success of Management by Objectives is whether it will be seen to be a system of imposed control or a system of control exerted by the individual himself. (For fuller discussion of this wide ranging theory the reader is referred to Ordiorne, 1965, and Humble, 1965 and 1967.)

Concluding Comments

Seashore (1967) claims that one of the potent factors determining the accuracy and amount of communication between two people is their relative status and power in an organisational hierarchy. Several studies have shown that members of middle management in formal organisations almost invariably over estimate the frequency of their personal contact with subordinates. Similarly, when managers are asked to name their most difficult communication problem, the most frequently named tends to concern his ability to get time, or a fair amount of attention, from his immediate superior. For most people in most organisations, there is

some singular difficulty as well as desire in getting successful and adequate communication with superiors.

A major task of organisations is to motivate its members to communicate effectively and to strive towards the organisation's goals. The remainder of this thesis is taken up with a description of the research undertaken to help clarify these interrelationships between motivation and effective communication.

CHAPTER 10

HYPOTHESES DRAWN FROM THE LITERATURE

Many relationships concerning interpersonal communication in industry are suggested in the foregoing review of the literature, does communication become more accurate as trust increased, does effective communication improve performance etc., etc.? This chapter lists the questions for investigation and also presents these suggested relationships in diagramatic form.

Subsequent chapters test these hypotheses and question the structure of the diagrams presented here in an attempt to construct a more integrated model of the communication process.

Concerning an individual's performance in an organisation, the literature suggests that:

- 1a. A positive relationship exists between the brevity of communication and the performance of the individual.
- 1b. A positive relationship exists between the accuracy of communication and the performance of the individual.
- 1c. A positive relationship exists between the speed of communication and the performance of the individual.
- 1d. A positive relationship exists between the managerial style of the individual and his performance.
- 1e. A positive relationship exists between the educational level of the individual and his performance.

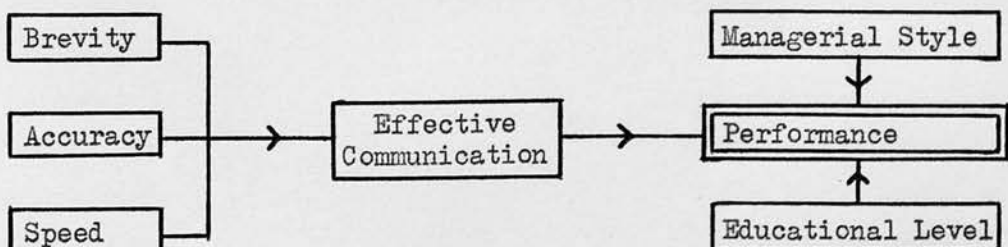


Figure 10.1

Concerning accuracy in communication the review suggests that:

- 2a. A positive relationship exists between the accuracy of communication and the managerial style of the individual.
- 2b. A positive relationship exists between the accuracy of communication and the educational level of the individual.
- 2c. A negative relationship exists between the accuracy of communication and the power-status differentials affecting the individual.
- 2d. A positive relationship exists between the accuracy of communication and the interpersonal trust between the communicating pair.
- 2e. A negative relationship exists between the accuracy of communication and the desire for promotion of the individual.
- 2f. A negative relationship exists between the accuracy of communication and the cognitive distance between the communicating pair.
- 2g. A positive relationship exists between the accuracy of communication and the role playing ability of the individual.

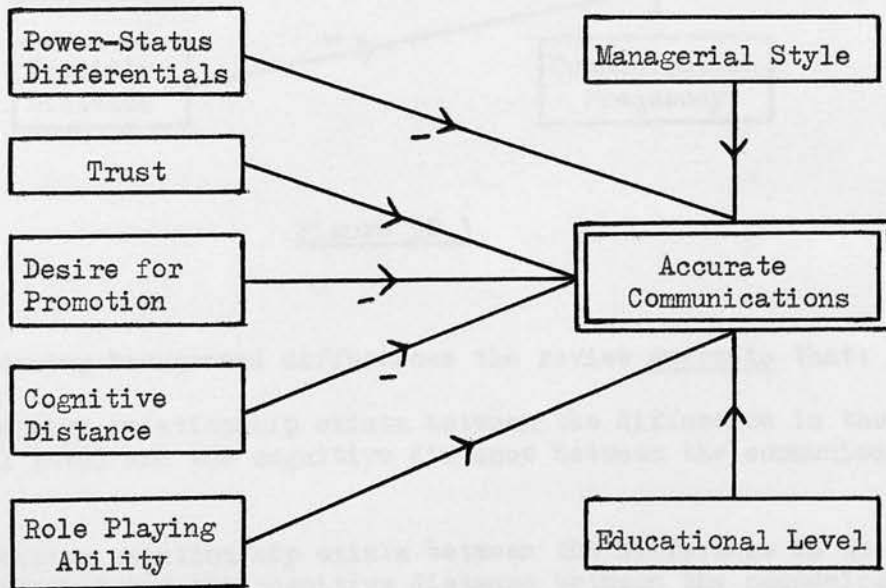


Figure 10.2

Concerning interpersonal trust the literature suggests that:

- 3a. A positive relationship exists between the interpersonal trust and the frequency of communication between the communicating pair.
- 3b. A negative relationship exists between the interpersonal trust and the cognitive distance between the communicating pair.
- 3c. A positive relationship exists between the interpersonal trust and the degree of feedback between the communicating pair.
- 3d. A positive relationship exists between the interpersonal trust of the communicating pair and the perceived power of the superior.
- 3e. A positive relationship exists between the interpersonal trust of the communicating pair and the listening ability of the superior.

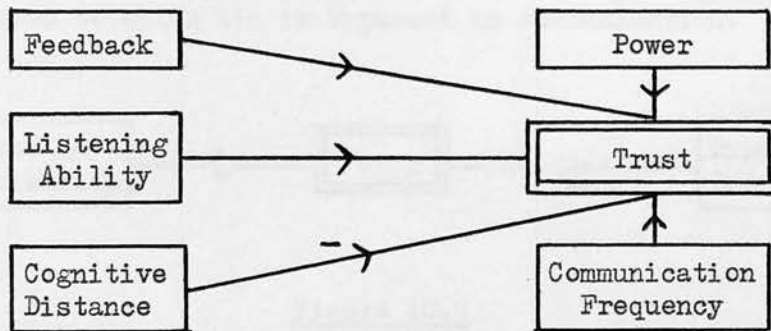


Figure 10.3

Concerning background differences the review suggests that:

- 4a. A positive relationship exists between the difference in the educational level and the cognitive distance between the communicating pair.
- 4b. A positive relationship exists between the difference in the social background and the cognitive distance between the communicating pair.
- 4c. A positive relationship exists between the difference in the age and the cognitive distance between the communicating pair.

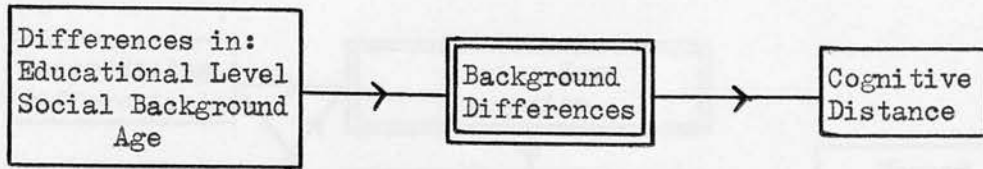


Figure 10.4

Concerning the power or influence of an individual the literature suggests that:

5a. A positive relationship exists between the level in the organisation of an individual and others perception of his power.

5b. A negative relationship exists between the power of an individual and the degree to which his is bypassed in communication.

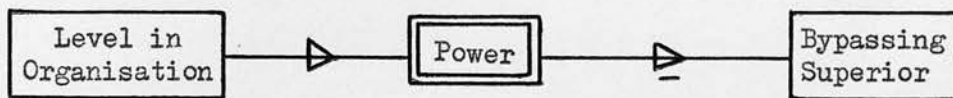


Figure 10.5

Concerning the remaining variables the review suggests that:

6a. A positive relationship exists between the length of time working for one person and the desire for promotion.

6b. A positive relationship exists between the length of time working for one person and the need for a promotional substitute.

6c. A positive relationship exists between the power-status differentials and the desire for promotion.

6d. A positive relationship exists between the power-status differentials and the need for a promotional substitute.

6e. A positive relationship exists between the need for a promotional substitute and the frequency of upward communication.

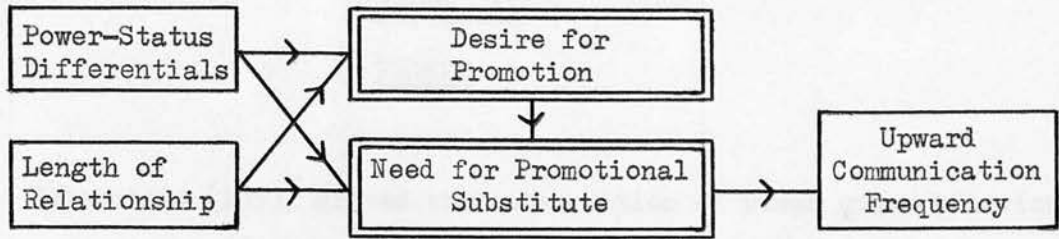


Figure 10.6

CHAPTER 11

METHOD

Rubenstein (1953) writes that observation of human group behaviour has proceeded along two major methodological lines. Some social scientists have become part of an ongoing organisation for a significant period of time, the aim being to become accepted members of the group they studied (participant observation). Other social scientists have entered organisations as outsiders and have used interviews and questionnaires to gather their data. The need in the present research to obtain comparable data between pairs of managers in a number of firms made the second approach the more suitable for this study.

Method of Enquiry

The design of the first pilot questionnaires (Appendices 1 and 2) was based largely on the work of Maier et al (1961). Pairs of immediate superior-subordinate managers* were asked to give details of various aspects of the subordinate's job, (responsibilities, training needs etc.). The two interviews (given separately) were then rated for the degree of agreement existing between the two managers. Both the results of this pilot study and those of Maier et al (described more fully on page 13) pointed to upward communication over job problems as the area in which the greatest communication gaps seemed to exist.

In the main study two basic methods were used. Highly structured questionnaires were given to pairs of immediate superior-subordinate managers to fill in and return. A sub sample of these managers was then interviewed in some depth to gain an overall impression of the firms

* Defined as personnel supervising the work of others.

philosophy, policies and status structure (see Appendices 5 and 6).

Selection of Firms

As stated earlier, one of the main aims of this research was to study managerial communication in a number of firms. To simplify interfirm comparisons one industry was selected for the main enquiry - electronics. As Burns and Stalker (1961) pointed out, the rapid expansion and high rate of innovation found among electronic firms suggested that a study of their communication problems would be of particular interest.

The review of the literature carried out in Part 1 suggested that a minimum of 50 "communication links" would be necessary in order to make conclusions of any weight. With this in mind it was decided to obtain entry to at least 5 firms and to involve, if possible, around 10 managerial pairs in each firm.

At the time of the study some 22 electronic firms were operating in an area covered by the local telephone directory (Appendix 3). Although 13 firms were selected from this list by using a random number technique this study cannot claim to be fully representative. Apart from the fact that the firms approached were not balanced for size, age distribution etc., the fact that there were a number of refusals introduced a bias¹. With this in mind however, the findings described later may well apply to other firms.

All the firms chosen could be described as medium sized (300-800 employees) and had four levels of management from first line supervisors (commonly termed foremen) to the managing director².

1 This in fact was the case. Of the 7 firms which took part in the study, 4 had received Queens Award to industry for "outstanding performance". Of the 6 firms which did not take part, none had received this award - an indication of the relative effectiveness of the two groups.

2 Drucker (1955, Ch. 17) writes of communication problems being created as extra levels of hierarchies are introduced. With four levels in each plant interfirm comparisons were facilitated.

The initial approach to the selected firms was by a letter requesting assistance in the research (Appendix 4). Of the 13 firms approached 7 firms replied and in each case an interview was arranged with the chief executive. At this interview full details of the aims and method of the investigation were given after which the seven firms all agreed to participate in the study.

Selection of the Managers

Following the interview with the chief executive, immediate superior-subordinate managers were selected randomly by the researcher from each firm's organisational chart (up-dated where necessary) of the managers working within the plant*.

Of the 64 managerial pairs involved in the study 49% worked in production units and 46% in research and development sections. The 128 managerial roles examined involved 89 managers in total (some managers filled more than one role - subordinate in one link and superior in another). Table 11.1 breaks this number down into supervisory levels.

Table 11.1

Supervisory Distribution of Respondents

Supervisory Level	1	2	3	4	Total
Distribution	41.6%	35.9%	14.6%	7.9%	100% (N = 89)

In all the firms "batch" and "production run" work was undertaken - often simultaneously. The similarity of task and firm size, coupled

* Zipf (1949) writes of physical distance inhibiting communication. By restricting the selection of managers to those working in the same plant, it was hoped to reduce the effect of the distance variable.

with the observation (elaborated on p 89) that the managers had or were capable of working in the other firms examined, seemed sufficient justification for treating the managers as a single group for some purposes, or as separate yet similar groups when making interfirm comparisons.

Field Work Procedure

The selected managers were met individually and assured of the confidential nature of the study. The aims of the research were explained and the questionnaires were given to the managers with a request for them to be filled in and returned, the time taken being used as a measure of speed in communicating.¹

One month after this initial meeting a second visit was made to the firms. On this occasion a random sub sample of 25% of the managers was selected for a detailed interview. These interviews which covered the questions of Appendix 5, section I were tape recorded with the subject's permission². Simultaneously another random sub sample of 10% were requested by letter (Appendix 7) to complete again section C of the questionnaire (Appendices 5 and 6) in order to assess the consistency of their replies.

During the second visit to the firms all the managers who had not by that time returned the questionnaires were contacted to encourage their completion of the questionnaire. One month later the remaining managers were sent a letter (Appendix 8) in a final attempt to elicit

1 In total 64 pairs of managers were approached, some 32% of the managers completed the questionnaires in the presence of the researcher while a further 58% returned the questionnaires by post (stamped addressed envelopes were provided). 10% of the managers did not respond to either method. Although the facilities offered by the firms varied from an interview room to which the managers came to see the researcher, to the researcher visiting the managers' rooms, exhaustive analysis of the data with regard to response rates and type of responses showed no noticeable differences.

2 For a discussion on the effects of tape recording interviews see Sellitz et al (1966, p 580); Miller (1951, Ch. 7); P.E.P. (1966, Ch. 2) and Bucher et al (1956). Their various arguments were studied before the decision to use a tape recorder was made.

the completion of their questionnaire. Three months after the initial interviews the study was closed in each firm.

As a matter of courtesy and public relations on behalf of research workers in general, reports on the overall results obtained were sent to the chief executives in the hope that they would be circulated among the managers who had assisted in the study (Appendices 41 to 44).

The Questionnaire

The aims and origins of the various sections of the two questionnaires (reproduced in Appendices 5 and 6) are set out below. In each section the main variables are underlined to highlight their importance. The statistical methods used to analyse the data are also described*.

Section A set out to identify the superior-subordinate pair, to ensure that both subjects were referring to the correct colleague, to gauge the length of their superior-subordinate relationship, their length of experience in their respective positions and whether the superior had previously held the subordinate's position (after Maier, 1963).

Section B attempted to detail the background of the respondents with regard to age, social and occupational background (Appendix 11), and educational level (Appendix 12). From this data rates of social mobility as a measure of an individual's career achievement could be calculated (Appendices 16 and 17).

Section C had three objectives:

- (i) to obtain the subordinates perception of the person most likely to know about his work problems,

* The information obtained from the questionnaires was transferred to punch cards (Appendix 21) and much of the subsequent analysis conducted via computer programs (Appendix 23).

(ii) to obtain a measure of the communication agreement in upward communication. The subordinate was asked to rank order set lists of common managerial problems according to the difficulty they caused him. His immediate superior was asked to rank order the same lists according to the difficulty these problems caused his subordinate (after Karlsson, 1951; Reid, 1962).

Using Kendall's Tau (1948), (see Appendix 33), the two rank orders were correlated for each problem category. A mean Tau, over the five problem areas provided the overall statistical index of agreement for each pair.

(iii) to obtain a measure of the similarity of the frames of reference between the superior-subordinate pairs, concerning their work problems. This was obtained by correlating (using Kendall's Tau) the subordinate's ranking of his own job problems with the superior's ranking of his own job problems. This measurement could only be made when a manager filled two roles in the study, that of superior to one manager and that of subordinate to another manager higher in the organisational chain.

Section D attempted to obtain a measure of the subordinates perception of his superior's influence (adapted from Reid, 1962).

The measure was derived from three questions, each with five alternative answers, scaled in terms of degree in the Likert (1932) fashion, from "most" to "least" perceived influence. Weights of one to five were assigned to these alternatives and summed. The possible range of scores for the three items was 3 - 15.

Justification for adding the weighted scores is given in Appendix 34c.

Section E set out to obtain a measure of the subordinate's trust in his superior (after Reid, 1962). This measure likewise consists of

a three item scale calculated similarly to the perceived influence scale of Section D. Justification for adding the separate scores is given in Appendix 34b.

Section F had three aims:

(i) to obtain a measure of the subordinates desire for upward mobility - promotion (after Miner and Culver, 1955).

This measure consists of a list of two alternative forced-choice items, ten in number, representing choices of hypothetical moves to other positions within the organisation. One alternative in each pair was the choice of a higher level position, but with an unpleasant condition attached. The other alternative consisted of a hypothetical transfer to a position equivalent to the one presently held, but with a rewarding or pleasant condition attached. This section of the questionnaire was scored simply by adding the total number of promotion alternatives chosen, yielding a possible range of scores of 0-10. This measure represents an attempt to determine the strength of the aspiration for promotion from an indication of the price the individual would pay for promotion upward in the organisation.

(ii) by comparing the need for promotion with the success in achieving it (the social mobility rates of Appendix 16), a measure was obtained of the psychological need for a substitute for promotion (see Appendix 18).

(iii) an estimation of the managerial style of the subject could be made from his answers to questions 3, 4, 6 and 8. His position on a grid of managerial style (Blake and Mouton, 1964) could be postulated by gauging his concern for production (questions 3 and 4), and his concern for people (questions 6 and 8). Appendix 19 gives more details of the scoring technique used.

Section G aimed to obtain a measure of the cognitive distance¹ between the superior-subordinate pair (after Triandis, 1960; Osgood et al, 1957). Subjects were asked to grade certain professions (eg. policeman) along a number of 6 point scales (eg. clean-dirty). By calculating the differences between the pairs' responses a measure of their cognitive distance was obtained (see Appendix 14 for more detail).

Section H had two objectives:

- (i) to obtain a measure of the total communication frequency³ between
 - (a) the subordinate and his superior and
 - (b) the subordinate and his superior's superior.

The frequencies with which the communication media (telephone, memo etc.) were used, were weighted 4 for daily contact down to 0 for no contact. The total score was obtained by adding these weighted scores for all the types of communication used.

- (ii) by subtracting the second score from the first a measure was obtained of the degree to which the immediate superior was bypassed by his subordinate or by his superior.

Section I. This section of the questionnaire was used in an attempt to gain a better understanding of the differing organisational philosophies found among the firms studied, and to gain some impressions of their effects on the managers. In particular it sought to obtain indices of the status systems operating in each of the firms² (see Appendix 13) and the system of feedback in operation through the type of performance appraisal used.

Statistical Point

Much research in the social sciences has adopted significance levels

1 This measure was introduced approximately half way through the study and was completed by 18 managerial pairs only.

2 After Finch and Hoehn (1951); Chapman (1955) and Mound (1968).

3 Brevity in communication was taken as the inverse of this measure.

at which the hypotheses being tested were accepted. Findings not reaching these levels have often been rejected regardless of their proximity to the cut off point. In this research three divisions are made. Where probabilities are less than 10%*, the null hypothesis of randomness is rejected. Where probabilities exceed 90% the variables are said to be randomly distributed and the hypothesis under examination is rejected ie. no relationship between the variables is found to exist. Where probabilities fall between these two values, the findings are said to be inconclusive and are not commented upon, and in the tables no figures are given for the probability, merely the symbol I. As an aid to the reader significant relationships are underlined.

	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	Total
10-20	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	18.0
20-30	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	36.0
30-40	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	54.0
40-50	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0	72.0
50-60	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	90.0
60-70	3.0	6.0	9.0	12.0	15.0	18.0	21.0	24.0	108.0
70-80	3.5	7.0	10.5	14.0	17.5	21.0	24.5	28.0	126.0
80-90	4.0	8.0	12.0	16.0	20.0	24.0	28.0	32.0	144.0
Total	18.0	36.0	54.0	72.0	90.0	108.0	126.0	144.0	750.0

* The smallness of the sample precluded the use of a 5% level (see Read, 1962).

CHAPTER 12

PERSONAL CHARACTERISTICS OF THE RESPONDENTS

The rapid growth of the electronics industry in post-war Scotland¹ has resulted in a continual shortage of trained manpower. Under these conditions new firms seeking to establish themselves have often "poached" employees from all levels of well established firms. Among the managers in this study for example, only 33% had worked for one electronics company while 47% had worked for two companies and 20% had worked for three or more electronics firms². Comparing the age distribution, educational attainment and interfirm mobility of these managers with managers in the Chemical, Engineering and Textile Industries³, (Tables 12.2, 12.4 and 12.7) the electronics managers of this study can be described as young, mobile and well "educated".

Table 12.1

Age Distribution of Respondents

Age Group	20-24	25-29	30-34	35-39	40-44	45-49	50-54	Total
Distribution%	2.4	20.8	28.1	19.5	12.2	14.6	2.4	100% (N = 82)

1 A Financial Times Survey (18th November, 1968) wrote that during the twenty years from 1948-1968, the industry in Scotland had grown from one firm to eighty two companies employing thirty eight thousand people.

2 In many cases these "earlier firms" were also involved in this study.

3 Mossen and Clark (1968).

Table 12.2Age Distribution of Managers from other Industries

Age Group	-39	40-54	55+	Total
Chemicals ¹ %	44.6	48.2	7.2	100% (N = 195)
Engineering ¹ %	25.0	48.9	26.1	100% (N = 176)
Textiles ¹ %	19.7	41.5	38.8	100% (N = 183)
Electronics ² %	70.8	29.2	0	100% (N = 82)

Table 12.3Length of Education of Respondents

Years of ³ Education	Elementary	Secondary	Graduate	Post-Graduate	Total
	≤ 10	11-13	14-16	17-20	
Distribution %	13.8	44.8	31.0	10.4	100% (N = 87)

1 Source Mossen and Clark (1968)

2 Adapted from Table 12.1

3 See Appendix 12 for details of this measure

Table 12.4

Educational Distribution of Managers from other Industries

Educational Level	Elementary	Secondary	University	Total
Chemicals ¹ %	17.9	19.1	63.0	100% (N = 195)
Engineering ¹ %	44.3	32.7	23.0	100% (N = 176)
Textiles ¹ %	36.6	36.4	27.0	100% (N = 183)
Electronics ² %	13.8	44.8	41.4	100% (N = 87)

Table 12.5

Social Status of Respondents

Social ³ Status	Upper		Middle		Lower			Non ⁴ Response	Total
	1	2	3	4	5	6	7		
Social Background %	1.2	13.5	11.2	22.4	25.8	16.7	1.2	7.9	100% (N = 89)
Present Occupational Status %	6.7	16.9	41.5	31.5	3.4	0	0	0	100% (N = 89)

1 Source Masson and Clark (1968)

2 Adapted from Table 12.3

3 See Appendix 11 for details of this measure

4 All the managers in this category stated that their fathers died during their childhood - see question B4, Appendices 5 and 6.

Table 12.6

Social Origins of Managers from other Industries

Registrar General's Social Class	Professional 1	Managerial & Supervisory 2	Skilled Manual & Clerical 3	Semi Skilled 4	Unskilled 5	Total
Chemicals ¹ %	6.7	37.1	44.3	10.3	1.6	100% (N = 194)
Engineering ¹ %	8.1	33.9	42.5	12.0	3.5	100% (N = 174)
Textiles ¹ %	15.2	24.3	44.6	13.6	2.3	100% (N = 177)
Electronics ² %	15.9	36.6	28.0	18.2	1.3	100% (N = 82)

Table 12.7

Inter-firm Mobility among Managers from other industries

Number of Firms Worked for	1	2	3	4	5+	Total
Chemicals ¹ %	47	22	16	6	9	100% (N = 195)
Engineering ¹ %	34	24	19	9	14	100% (N = 175)
Textiles ¹ %	41	26	19	5	9	100% (N = 173)
Electronics %	33	47	13	6	1	100% (N = 78)

1 Source Masson and Clark (1968)

2 Adapted from Table 12.5

Table 12.5 gives an indication of the high social mobility of these managers. Thus although 43.7% of the managers came from lower class families only 3.4% could still be placed in this category, the remaining 40.3% having risen to middle or upper class positions.

Notwithstanding this general movement up the social ladder, the social background of the managers was found to have had a considerable effect on their careers. Thus as Table 12.8 shows managers with a higher social background received more education and obtained higher positions throughout their working lives than managers from lower class families. Thus the son of a doctor tended to have received more education than the son of a labourer. His subsequent assignments and positions also tended to carry a higher status than those obtained by a labourer's son.

Table 12.8

Interrelationships of Social Background with other Variables

	Statistic	Value	N ¹	p ¹	See Appendix
Age	r	- 0.07	82	I	34f
Length of Education (Years)	χ^2	(+) 7.53	82	<u>0.02</u>	31n
Original Occupational Level	χ^2	(+) 3.15	82	<u>0.07</u>	31p
Present Occupational Level	χ^2	(+) 15.15	82	<u><0.001</u>	31o
Work Life Mobility Rate	r	- 0.11	82	I	34f

1 The following symbols are used in this and the subsequent tables:

N = sample size
p = probability

Table 12.9

Interrelationships of Length of Education with other Variables

	Statistic	Value	N ¹	p	Appendix
Age	χ^2	(-) 7.89	78	0.09	31q
Original Occupational Level	χ^2	(+)47.78	89	<0.001	31s
Present Occupational Level	χ^2	(+)13.59	89	<0.001	31r
Work Life Mobility Rate	χ^2	(+)20.83	77	<0.001	31m

Higher educational levels seemed to be the key to these relationships, whereas social background was not related to the work life mobility rate, educational level was (Tables 12.8 and 12.9). Thus if a manager from the "lower classes" had reached a high educational level, then his social background did not seem to affect the rate at which he was climbing the social status ladder².

These factors have been noted for some time and considerable argument has arisen as to the causes. Miles (1969) argues that social background and intelligence are related in such a manner that many children from lower status homes are unable to obtain higher education because of their lack of ability. Inkeles (1960) however, emphasises upbringing or social background as a major factor:

"Not only is the horizon restricted for the individual of lower status, himself: he also tends to ensure his self-perpetuation by restricting the horizon of his children and others who share his disadvantage status. Less well equipped with education and experience than those in more favoured positions, he learns that a little bit of security is a good thing and that it is wiser to choose what is certain

1 The variation in sample size is explained in detail on page 98.

2 These findings confirm the comments of Dalton (1964, p 163) who wrote of social background not affecting an individual's progress up the organisational hierarchy. Blake and Mouton (1964, Ch. 10) also report that educational attainment was an important factor in the rate at which the managers in their study achieved promotion.

than to strive for the perhaps unattainable. Consequently, we may expect him to be much less likely, than persons of middle or upper status, to urge a young man to strive for an occupation with high status which may not be easily obtained." (ibid, p 20)

Miles (ibid) would also agree with this line of thought. In a study of 2,000 "O" level candidates he found that although the choice of subjects taken (eg. German as opposed to Woodwork) varied according to the socio-economic status of the child's parents (Rank correlation coefficient 0.95), the strength of this relationship could not be explained by the social background-intelligence relationship he uncovered (Rank correlation coefficient 0.15). He concludes (as does Plowden, 1967, in a study of primary school children) that parental influences are of considerable importance in an individual's choice of career.

In the present study the effect of social background on the educational level reached was considerable¹, but it was also noticeable (Table 12.9) that the younger managers, whatever their social backgrounds, had received more education than their older colleagues and were thus better equipped to rise above their "restricted horizons".² To what degree this finding is due to historical changes in educational opportunity (eg. raising the school leaving age) or changes in attitudes towards education is impossible to say.

1 It is worth noting that these relationships were considerably stronger than the interpersonal or organisational relationships discussed in the subsequent chapters.

2 For a fuller discussion of this topic see Glass (1966); Bendix and Lipset (1964); Marsden and Jackson (1962); Crowther (1960) etc.

The relationships described in this chapter can be illustrated in diagrammatic form as shown below. (See also Appendices 31t and 34d-f.)

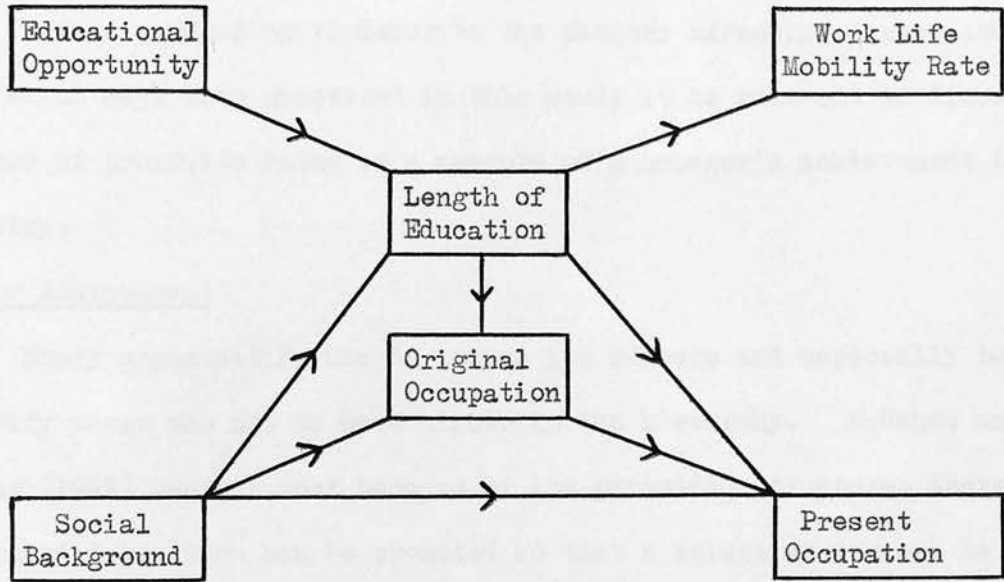


Figure 12.1

CHAPTER 13

PERSONAL FACTORS AFFECTING CAREER ACHIEVEMENT

Before proceeding to describe the factors affecting career achievement which have been uncovered in this study it is relevant to discuss the use of promotion rates as a measure of a manager's achievement in industry.

Career Achievement

Every organisation has to assess its members and especially to identify those who are to move higher in the hierarchy. McGehee and Thayer (1961) suggest that because of its pyramidal structure, there are more candidates than can be promoted so that a selection process is inevitable. Promotion decisions are rarely based on a single opinion, but on a group assessment, usually by people holding positions higher than the one being considered. Whitla and Tirrell (1954) write that whatever the arguments over human judgement, this basis of selection has yet to be seriously challenged by other methods and is an adequate measure of a manager's achievement.

Many writers have equated promotion with performance thus Katz et al (1950) subscribed to this belief when they used promotability as their comparative measure of performance and Read (1962) took this logic further by using achieved promotion for his measurements.

In neither study however, do these researchers take account of the age of the individual. One can postulate that a young man who had worked his way up to middle management may have contributed more annually to his organisation than an older man at the same level who had taken considerably longer to achieve these promotions. Blake and Mouton (1964, Ch. 10) agree with these last points and suggest that performance be

measured by dividing the achieved promotion by the time involved in obtaining it¹.

Personal Factors

An exhaustive list of the factors which go to make up an individual manager's achievement in an industrial setting is not to be found in the literature. In the context of this study however, three variables can be examined (compare figure 10.1) viz:

Length of Education

Managerial Style

Effectiveness of Communication.

The results of this examination are summarised in Table 13.1 below.

Table 13.1

Interrelations of Work Life Mobility Rate with other Variables

	Statistic	Value	N ²	p	See Appendix
Length of Education (Years)	χ^2	(+)20.83	77	<u><0.001</u>	31m
Managerial Style	τ	+ 0.50	61	<u>0.06</u>	33a
Speed in Communicating	r	- 0.08	82	I	34g
Accuracy in Communicating	χ^2	(+) 5.13	53	<u>0.07</u>	31a
Frequency in Communicating	r	+ 0.03	59	>0.90	34g

- 1 The Work Life Mobility Rate - Appendix 16 - uses a similar method. Interfirm mobility did not play a major part in this measure. Appendix 36a indicates that inter firm variation was insignificant although older firms had retained their managers while younger firms had "poached" many of theirs.
- 2 The complex nature of the questionnaire accounts for the variation in sample size. Thus of the 89 managers 7 had lost their fathers at an early age and were not given a social background grading and the work life mobility rate could not be calculated. Similarly although 115 questionnaires were completed they comprised only 53 pairs for the accuracy measure but gave 61 measures of managerial style.

Length of Education

Table 13.1 indicates that managers with higher educational levels had achieved faster rates of promotion than their less educated colleagues (hypothesis 1e). The additional finding that those subjects with more years of education were more accurate communicators than the less educated managers (hypothesis 2b, Appendix 34h) raises the interesting suggestion that well educated managers having achieved fast promotion might be recruited for middle or upper managerial levels especially when communicating ability is considered essential.

Managerial Style

Table 13.1 also demonstrates that managers with a better managerial style had achieved faster rates of promotion than managers with a worse style of managing (hypothesis 1d). Although Appendix 19 details the method used for grading managerial style based on a projected self-assessment method*, it seems useful here to describe the concepts behind the system of designating styles.

Two of the most important dimensions of the management function are the concern for production and the concern for people. Representing this in diagram form, it becomes a grid of Managerial Style where:

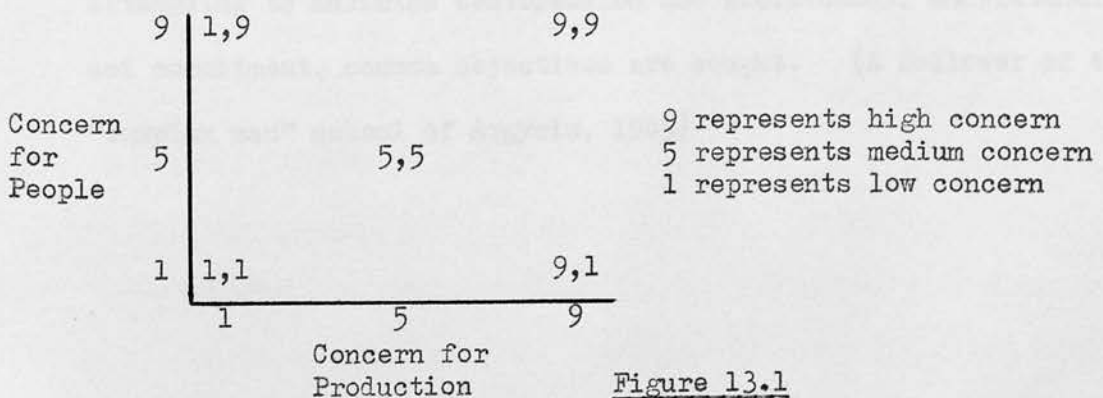


Figure 13.1

* The managers filled in Section F of the questionnaire with reference to their promotional choices.

While the work of Blake and Mouton (1964) and Brooks (1955) goes into more detail, a simplified description of the styles might be:

(1,1) An apathetic manager who has no concern for production or people.

He often works by the rule book and will usually only do work prescribed by the organisation.

(1,9) A "human relations" man who feels that production targets and the like consistently interfere with the good relations he tries to maintain with both superiors and subordinates. (A follower of the "social man" school.)

(5,5) An "organisation man" who compromises and shifts his stance according to the pressures or politics of the time, caricatured in Whyte's (1956) book "The Organisation Man".

(9,1) A systems manager who believes that people are only being retained until machines can replace them. Subordinate functions are seen as holding ones and the 9,1 manager continually attempts to reduce the human side of his subordinate's tasks by installing mechanistic systems. (A believer in the economic man of Taylor, 1911.)

(9,9) A balanced style in which the manager (unlike all the other styles) sees no conflict between production and individual objectives. By attempting to maximise contribution and achievement, understanding and commitment, common objectives are sought. (A follower of the "complex man" school of Argyris, 1965)

Table 13.2

Managerial Style versus Work Life Mobility Rate*

Managerial Style Ranking by Managerial Grid	9,5 1	9,1 2	5,9 3	5,5 4	5,1 5	1,9 6	1,5 7	1,1 8
Average Work Life Mobility Rate	0.104	0.094	0.090	0.088	0.093	0.075	0.098	0.072
Sample Size	2	8	6	10	9	10	8	8
Ranking by Work Life Mobility Rate	1	3	5	6	4	7	2	8

$$\tau = 0.50$$

$$p = \underline{0.06}$$

In Table 13.2 the results of a much larger study of over 700 managers by Blake and Mouton (ibid) have been compared to those of this research. It will be seen that their ranking of managerial style by a different measure of performance is similar to that of this research. That is, in both studies managers tending towards the 9,9 style achieved faster rates of promotion than managers with lower styles, thus 9,5 managers had achieved faster rates of promotion than managers with lower styles - 9,1 5,9 5,5 etc.

Similarly this rank order of styles was also related to the accuracy with which the managers communicated (hypothesis 2a, Appendix 33b) with managers approaching the 9,9 style most accurate and those approaching 1,1 style least accurate. The significance of these findings will be discussed later in Chapter, 15.

Effective Communication

The methods used for measuring the three components of effective communication (speed, accuracy and brevity) have been described in Chapter 11.** The relationship of each component with individual performance

* See Appendix 33a for greater detail of this test.

** Speed on page 83, accuracy on page 85 and brevity on page 87.

shown in Table 13.1 is described below.

The correlation of speed in communicating with work life mobility rates produced inconclusive findings which precludes further comment.

Accuracy in upward communication was positively related to performance (hypothesis 1b). That is managers who communicated accurately had achieved faster rates of promotion than their "less accurate" colleagues.

Table 13.3

Subordinate's Answers to the Question
"Who is in the best position to know your
problems" (Appendix 5, Section C)

Answer	N	Average Communication Accuracy Score	"t" test probability ¹
My boss	35	0.20	<u>0.02</u>
My associates	15	0.11	
Others	2		

The results in Table 13.3 demonstrate that the subordinates in this study could recognise accurate communicators. Thus superiors said to be most in touch with the subordinate's problems had higher accuracy scores on these problems than superiors who the subordinates felt were not so in touch. These subordinates indicated "associates" or "others" as being more in touch with their problems than their superior. If one believes (with Eckerman et al, 1962), that superiors are equally competent in recognising accurate and inaccurate communicators among their subordinates then several practical implications result. Judging by the response to Section F of the questionnaire most of the subordinate managers (95%) desired promotion to some degree. One way for these subordinates to improve

1 See Appendix 32a for greater detail of this test.

their chances of achieving promotion might be for them to pass up relevant details of their major problems - not to withhold or distort the facts in an attempt to create the "right impression" with their superior. Apart from the fact that this "right impression" may not fool superiors, the subordinate who insulates his superior from clear knowledge of work problems, insulates himself from whatever expert knowledge and influence the superior might apply in solving the difficulties.

Table 13.1 shows that brevity in communication¹ was not related to performance (hypothesis 1a). The degree of randomness of the results indicated that this hypothesis can be rejected. The study of Burns (1967), reported on page 19, found that the time spent in communicating was positively related to organisational performance. It should be recollected that the measurement used in the present field work was the frequency of communication without consideration of the actual time spent on each occasion. It would seem that further research in this area is required to explain these slightly conflicting findings.

The findings of this chapter can be represented diagrammatically (Figure 13.2) and can be compared with the hypothetical framework (Figure 10.1) deduced from the review of the literature. Thus the validity of the hypothetical framework is confirmed and strengthened by the discovery of the additional interrelationship of managerial style and length of education with accurate communication.

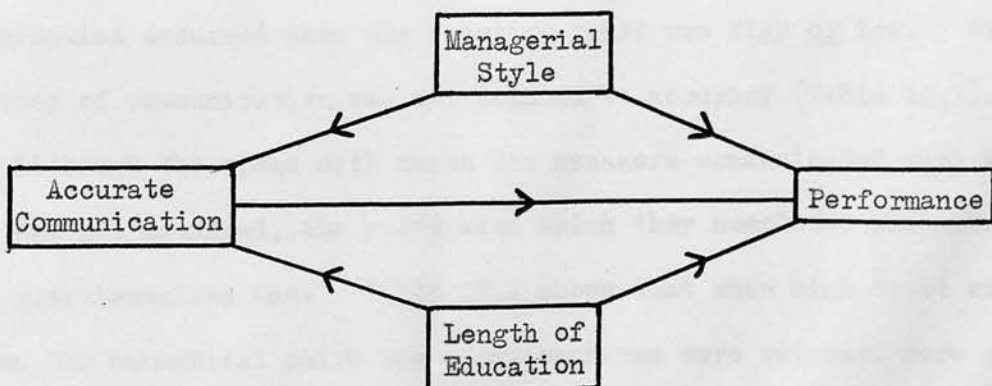


Figure 13.2

1 In this study the inverse of frequency of communication.

CHAPTER 14

INTERPERSONAL FACTORS IN COMMUNICATION

The foregoing pages have shown that accuracy in communication, rather than speed or brevity, was the important communication factor in an individual's rate of promotion. This chapter examines some of the interpersonal factors which affect the accuracy with which subordinates and superiors communicate with each other. The results of this examination are summarised in Table 14.1.

Interpersonal Trust

No study of communication can afford to ignore the factor of trust between communicating pairs. As was mentioned in Chapter 7, it is a widely held belief that really effective or accurate communication cannot occur unless an atmosphere of trust and confidence exists. Table 14.1 confirms this belief (hypothesis 2d). Subordinates who rated their superiors highly in the trust section of the questionnaire produced more accurate communication scores than those subordinates who rated their superiors low in the trust section.

The review of the literature in Part 1 suggested that the frequency with which superior-subordinate pairs communicated would be positively related to the degree of trust existing between them (hypothesis 3a). Table 14.1, however, indicates that this was not the case for frequent communication occurred when the existing trust was high or low. Similarly frequency of communication was not related to accuracy (Table 14.1).

Although the speed with which the managers communicated with each other was not measured, the speed with which they completed and returned their questionnaires was. Table 14.1 shows that when high trust existed between the managerial pairs the questionnaires were returned more quickly

Table 14.1

Summary of Interrelationships of some of the Variables
discussed in Chapter 14.

	Statistic	N ¹	Value ²	p	See Appendix
Accuracy in Upward Communication with					
Interpersonal Trust	χ^2	52	(+) 4.32	0.10	31c
Desire for Promotion	χ^2	53	(-) 4.84	0.08	31b
Perceived Influence	r	52	+ 0.39	<0.01	34h
Supervisory Level ²	χ^2	52	(+)11.18	<0.01	31d
Communication Frequency	r	52	- 0.18	I	34h
Frames of Reference	r	24	+ 0.27	0.10	34h
Interpersonal Trust with					
Communication Frequency	r	57	+ 0.02	>0.90	34i
Speed in Communication	r	59	+ 0.46	<0.001	34i
Desire for Promotion with					
Supervisory Level	χ^2	61	(+)10.89	<0.01	31g
Work Life Mobility Rate	r	61	+ 0.08	I	34g

1 See the footnote on page 98 for an explanation of the variation in sample size.

2 Statistically speaking χ^2 tests give only positive values regardless of the direction of the relationship. In this Table the direction of the relationship has been given in the brackets. Thus with the Supervisory Level - Communication Accuracy test, the χ^2 value of (+)11.18 indicates that the higher the supervisory level (ie. from foreman up to managing director) the more accurate was the communication.

than from less trusting pairs. To what extent this result was due to the subordinate's trust in his superior in particular or to people (including the researcher) in general is impossible to say.

Desire for Promotion

Table 14.1 confirms the hypothesis (2a) that those subordinates who valued promotion highly tended to restrict communication. Thus the superiors of subordinates with high promotional desires were less informed as regards their subordinates' problems (producing lower accuracy scores) than superiors whose subordinates had lower promotional desires. It is interesting to note also at this point that managers with strong promotional desires had not achieved faster rates of promotion than those managers with lower promotional desires (Table 14.1).

In a similar study by Read (1962) mentioned on page 39, an even stronger relationship between inaccuracy in communication and promotional desire was reported. Read's study involved managers drawn exclusively from the second and third levels of supervision. The present study involved managers from the first four levels of supervision with some 42% of the managers at the first level of supervision* - a level which Read did not investigate. As the promotional drive was found to be weaker at lower levels of the hierarchies (Table 14.1), a sample drawn only from the second and third levels might well have produced identical findings.

Read suggests that:

"It is unlikely that upward mobility drive would vary markedly from level to level, or that communication upward would be more free at one level than another." (Read, 1959, p.60)

This statement must be questioned however. Table 14.1 indicates that higher level managers were more promotion minded than their juniors

* This large proportion was due to the pyramidal structure of the firms and the random sampling techniques used. The complete distribution is shown in Table 11.1.

and also that communication accuracy improved as one moved up supervisory levels.

It would however be dangerous to make Read's error of extending his results beyond the framework of his research - the location and personal characteristics of the electronics managers involved in this study should be borne in mind when considering the findings of this research.

Perceived Influence

Industry offers its successful managers many rewards, promotion and salary increments are two such examples while recognition of work done is another - a reward often coveted by scientists both pure and applied. The study by Perlmutter and Hymovitch (1954) described on page 36 illustrates this point.

Many writers suggest that powerful superiors are less likely to receive (from their promotion seeking subordinates) adverse information about their performance (hypothesis 2c). Other writers postulate that work orientated executives might be expected to communicate especially about their adverse and difficult problems to individuals who can advise or assist them. As one manager in the study put it:

"An influential boss is the only one worth having - its no use taking your problems to a fellow who hasn't the authority or resources to solve them."

Table 14.1 shows that in this study superiors with greater influence received more information about their subordinates' problems than their less influential colleagues. The background of the managers may be an important factor in this finding. Like the subjects of Perlmutter and Hymovitch (ibid), the managers involved in this study were well educated and many* had received university education. It may be that among these managers constructive comment and criticism is highly regarded while in other industries it may be frowned upon.

* 41% see Table 12.3 page 90.

Frames of Reference

Perhaps the simplest way of defining a frame of reference is to look upon it as a background of opinions, used to make everyday decisions and based largely on personal experience*. Where two people have a similar frame of reference Roethlisberger (1953) refers to the "same wavelength" and suggests the communication between such individuals will be both easier and more rewarding than if their frames of reference were vastly different. As a manager in the study expressed it:

"We think along the same lines - we're on the same wavelength - that's my biggest advantage with the boss."

In relation to the questionnaire used one might expect that the way a superior saw his own problems would influence his estimation of his subordinate's problems (hypothesis 2f). Table 14.1 indicates that this was the case. Thus the superiors tended to see the subordinates as having the same major and minor problems as themselves despite the fact that the subordinates might have seen their own problems quite differently. Even though most of the managerial pairs (90%) demonstrated some degree of agreement, the superior's view of his subordinate's problems tended to be closer to his own problems than to those of his subordinate.

Ideally one might hope that the superior could put his own problems behind him and look objectively at his subordinate's individual problems. A possible explanation for this general failure may be that superiors don't listen attentively to what their subordinates have to say. The review of the literature demonstrated in a number of ways, the two way nature of the communication process, so that receiving can be just as important as transmitting. The frequently held stereotype of the business executive has the manager as a dynamic, often aggressive giver of

* A fuller definition is given in the Glossary, Appendix 51.

Table 14.2

Rank Ordering of Problems - Consistency

	N	Total ¹ Tau	Mean	Standard Deviation
Basic Data	53	9.01	0.17	
Subordinate Sub Sample	5	2.91	0.58	
Superior Sub Sample	8	3.17	0.40	
Combined Sub Sample	13	6.08	0.47	0.19

$$\begin{aligned}
 t &= 5.69^2 \\
 v &= 12 \\
 p &< 0.001
 \end{aligned}$$

Table 14.3

Coefficients of Concordance (W) Among Subordinates' Rank Orders of the Difficulty of Their Problems in the Five Problem Areas³

Problem Area	N ⁴	W	p
Co-ordination and Communication	59	0.160	<.001
Budget and Cost	57	0.125	<.001
Technical	58	0.091	<.001
Pressures and Deadlines	60	0.173	<.001
Administration and Supervision	58	0.185	<.001

Table 14.4

Coefficients of Concordance (W) Among Superiors' Rank Orders of the Difficulty of Their Subordinate's Problems in the Five Problem Areas³

Problem Area	N ⁴	W	p
Co-ordination and Communication	54	0.271	<.001
Budget and Cost	52	0.094	<.001
Technical	52	0.087	<.001
Pressures and Deadlines	54	0.154	<.001
Administration and Supervision	54	0.186	<.001

- 1 Accuracy of Upward Communication.
- 2 See Appendix 32 for more details of this test.
- 3 See Appendix 35 for more details of this measure.
- 4 In some instances subjects were unable to rank-order problems in all problem areas, hence the total N varies.

instructions rather than a listener. The limiting effect that frames of reference had on accurate communication indicates that there may be some truth in this belief, but it also shows the detrimental effect on the two way communication process.

But could these results have occurred because of a superior's laziness or lack of interest in completing the questionnaire? Were superiors in general using a stereotyped picture of their subordinates? In essence how valid was the communication accuracy score? Table 14.2 refutes the first question by demonstrating the high consistency with which problem lists were ranked when a random sub-sample were asked (Appendix 7) to recomplete this section one month after the initial interview.

Tables 14.3 and 14.4 go on to demonstrate that although the overall problem rankings were similar, this was due to the firms having common problems, and not to the superiors making use of stereotyped subordinate problems. That is the superior's rankings were directed specifically to his own subordinate and not subordinates in general. Thus as Table 14.5 indicates, the average communication accuracy score of the managerial pairs was significantly higher than that of the artificially created stereotype population*.

Table 14.5

Comparison of Subjects' Communication Accuracy with that of a
Stereotype Population

	N	Average Accuracy in Communication	Standard Deviation
Research Sample	53	0.17	0.18
Stereotype Population	396	0.09	-

$$\begin{aligned}
 t &= 3.2 \\
 v &= 52 \\
 p &< 0.001
 \end{aligned}$$

* The "population" was created by comparing each superior's ranking of problems with every subordinate in his firm except his own subordinate.

Background Differences

Educational and social snobbery has been a source of argument in Britain for generations. Berlo (1960, p 164) among others, suggested that these status differences, when large, would adversely affect communication accuracy (hypothesis 2a). Table 14.6 demonstrates that in the electronic firms studied this was not the case. Social background and educational differences produced results which are inconclusive, while age differences - a measure of the "generation gap" - on this evidence had no effect on communication accuracy.

Table 14.6

Intercorrelations of Accuracy in Upward Communication with Differences in the Backgrounds of the Managerial Pairs

	r	N	p
Difference in Age	+0.04	53	> 0.90
Difference in Social Background	-0.12	45	I
Difference in Length of Education	-0.15	53	I

Cognitive Distance

The question of dissimilarity between frames of reference (of the superior-subordinate managers) affecting the accuracy of upward communication was explored by incorporating a cognitive distance measure into the questionnaire (adapted from the work of Triandis described on page 44). Essentially this measure attempted to gauge the distance between the managerial pair concerning their frames of reference on a variety of professions (Teacher, Welder, Clerk, Reporter and Policeman - see Appendix 14).

The literature suggests that background differences (education, age and social background) between the managerial pair would produce greater gaps between their frames of reference (increased cognitive distance) and

Table 14.7

Intercorrelations¹ of Similarity of Frames of Reference with other Variables.

	r	N ²	p
Accuracy in Communicating	0.27	24	0.10
Interpersonal Trust	0.15	24	I
Cognitive Distance	-0.72	7	0.03
Difference in Age	0.37	24	I
Difference in Length of Education	-0.08	24	> 0.90
Difference in Social Background	0.27	24	I

Table 14.8

Intercorrelations¹ of Cognitive Distance with other Variables

	r	N ²	p
Accuracy in Communicating	-0.12	18	I
Interpersonal Trust	-0.43	18	0.04
Frames of Reference	-0.72	7	0.03
Difference in Age	0.37	18	0.06
Difference in Length of Education	-0.08	18	I
Difference in Social Background	-0.38	18	0.06

1 See Appendix 34 for details of this test.

2 The smallness of the sample should be borne in mind when interpreting these results.

that this in turn would lower trust and decrease communication accuracy (hypotheses 4a, b and c). The results shown in Tables 14.7 and 14.8 however produce a complicated picture. Thus some background differences (age and social background) increased the cognitive distance but did not affect the degree of similarity between the frames of reference.**

Similarly greater cognitive distance decreased trust while differences in the degree of similarity of the frames of reference of the managerial pair did not affect the amount of trust existing between the managers. Finally while differences in the cognitive distance did not affect the accuracy of communication, greater similarity between the frames of reference did. More extensive research is required to explain these results*.

** These were two distinct measures: (1) the similarity between frames of reference (see page 85) (2) cognitive distance (see page 87).

* The smallness of the sample may be responsible for these findings. Only 24 managers filled a double - superior/subordinate - role in the study allowing a frame of reference to be obtained. The cognitive distance measure was introduced half way through the research giving only 18 measurements.

CHAPTER 15ORGANISATIONAL FACTORS IN COMMUNICATION

The results of this study indicate that although all the firms communicated with a certain degree of effectiveness, the differences between the firms were quite marked. By comparing the firms the degree to which organisational factors were responsible for good or bad communication could be calculated* (Table 15.1) and the practical implications of this analysis are discussed in detail below.

Table 15.1*Analysis of Organisational Variation

Variable	N	Organisational Variation
		%
Work Life Mobility Rate	81	24
Accuracy of Upward Communication	53	72
Interpersonal Trust	52	48
Perceived Influence	59	24
Desire for Promotion	53	55
Speed in Communicating	89	72
Frames of Reference	24	83
Length of Education	84	48
Managerial Style	60	36
Frequency in Communicating	57	40

Recruitment

In looking through the personal characteristics of the firms' managers it was noticeable that the only selection procedure that they seemed to have in common was that of "like choosing like". Thus the social background and type of schooling of the top management would tend to be reflected in the junior management. One manager explained the reasoning behind this:

"I don't suppose we do this consciously, but when you talk to an

* See Appendix 36 for greater detail of these results.

applicant you soon know if you would get on together. If he talks rugby while everyone else talks football, it is a clear indication to me that we would have communication problems later on."

The results of Table 14.6 described on page 109, indicated that differences in upbringing had no effect on the accuracy of communication between managers, while evidence from Tables 14.7 and 14.8 concerning cognitive distance and frames of reference, described on page 109 was inconclusive.

The only factors uncovered in this study which could be applied in the selection of good communicators were those of educational level (Appendix 34h) or managerial style (Appendix 33b). An even more direct approach might have been to select "high performers" for middle or upper managerial levels, especially where communicating ability was essential (Table 13.1, page 98).

The suggestion to recruit educational "whiz kids" or the "high flyers" of industry may be a daunting prospect for many managers apprehensive of their own job security. It should be remembered however, that in this study, their common factor was "accurate communication." In neither group were these managers more promotionally minded than their less endowed colleagues (Table 15.2).

Table 15.2

Intercorrelations of Desire for Promotion with other Variables

	r	N	p
Length of Education	+ 0.03	54	> 0.90
Work Life Mobility Rate	+ 0.08	61	I

Training

Contrary to many industrialists' beliefs, superiors who had not previously held their subordinate's job achieved higher communication

accuracy scores than those managers who had held their subordinate's job, (Table 15.3).

Table 15.3¹

Replies to the question, "Has the Superior previously held the Subordinate's type of job".
(Appendix 5 and 6, Section A, Question 7)

		N	Average Upward Communication Accuracy ²
Superior-Subordinate Replies	No-Yes	3	0.26
	No-No	11	0.22
	Yes-Yes	29	0.18
	Yes-No	10	0.05
Total		53	

It may be that the frame of reference of the superiors who have had intimate experience of their subordinate's work, was more rigid than that of an inexperienced manager. Perhaps the extra effort involved in trying to understand the subordinate's work and problems - the need for the inexperienced manager to put himself in the subordinate's place - to role play (hypothesis 2g) - was one of the factors involved in this finding. A manager in the study seemed to have grasped this point:

"I have to use group decisions and the like. I don't know enough about all the sections I control - I'd be blinkered to think that I do. After all, 25 years in the Army did not teach me much about this industry. But it taught me a lot about men."

These implications have not escaped the attention of training specialists and give some credence to the use of job rotation, role playing and case study techniques in management development programs. (Recommended by such writers as Whisler and Harper (1962) p 34; Rose (1962) and Braden and Trutter (1963).)

1 See also Appendix 32c.

2 The overall average of this measure was +0.17 with a standard deviation of 0.18.

Perhaps of relevance here was the point made by Ordiorne (1965, Ch. 9); Mann (1951); Hariton (1951) etc., that the introduction of new techniques, and especially ones of a "psychological" character, required top management approval for their successful implementation. As one manager in the study complained:

"We go on courses infrequently and when we do, we often find that top management knows nothing about the techniques we've been learning and then they won't apply them. I think top management should take the courses before we do."

Table 15.4

Intercorrelations of Length of Superior-Subordinate Relationship
with other Variables

	r	N	p
Desire for Promotion	+ 0.17	60	<u>0.09</u>
Need for a Substitute for Promotion	+ 0.26	58	<u>0.02</u>
Work Life Mobility Rate	- 0.04	82	I

Concerning job rotation, it was of interest to note that when subordinates had been with their superior for some time (an indication of low job rotation) their promotion desire and need for a substitute for promotion were both increased (hypotheses 6a and 6b, Table 15.4) with the possibilities of resulting adverse effects described on pages 105 and 120. As Table 15.4 also shows a long relationship is not indicative of low performance or lack of past promotion. One manager described his way around this problem:

"I try to move junior staff around to relieve their boredom. When they are in their early twenties, stick to one section with others in their late twenties and have a boss at over 40 - it discourages the more ambitious ones. They cannot see ways of getting ahead."

Returning to the training methods of role playing, job rotation etc., simultaneously with the expected growth in the ability to see the "other

man's" point of view - to understand his role and predict his attitudes - should come the skill in redefining apparently conflicting aims in terms of common goals - (the 9,9 managerial style) with the resulting improvements in communication accuracy and career achievement described on page 99.

Delegation of Authority

Communication accuracy was found to be greater at higher levels of the firms (Table 15.5). Although this may have been due in part to the ability of the managers who have reached these higher levels (they also exhibited better managerial styles (Table 15.5), there were indications that another factor might have been the greater authority and responsibilities found at these levels (Table 15.5, hypothesis 5a). This may have brought the subordinate nearer to the point of decision-making and increased his sense of participation in the decision-making process. Even at lower levels, where subordinates believed the power of influence of their superior to be high, communication accuracy was improved (Table 15.6).

Table 15.5

Interrelations of Supervisory Level of the Subordinate with
other Variables

	Statistic	Value	N	p	Appendix
Accuracy in Upward Communication	χ^2	(+)11.2	52	<0.01	31d
Managerial Style	r	+ 0.30	61	<0.01	34o
Perceived Influence	r	+ 0.36	60	<0.01	34i

Table 15.6

Interrelations of Perceived Influence with other Variables

	Statistic	Value	N	p	Appendix
Accuracy in Upward Communication	r	+ 0.39	52	<u><0.01</u>	34h
Difference in Communicating Frequency	r	+ 0.25	59	<u>0.03</u>	34l
Interpersonal Trust	χ^2	(+)9.01	58	<u>0.01</u>	31f
Total Communicating Frequency	r	+ 0.00	58	<u>>0.90</u>	34l

Where subordinates perceived their immediate superior as having comparatively little power to assist them in their work problems, they tended to bypass him to reach his superior (hypothesis 5b, Table 15.6). That this results in "loss of face", is mirrored in the lower trust scores resulting (hypothesis 3d, Table 15.6). One manager in the study complained

"My boss bypasses me quite often. I've talked to him about it but he says that is the way he works. It can give rise to feelings of insecurity and loss of face. Whenever I have done it - and I do try to avoid it - it has been because of a weak link in the chain and that is the link I bypass."

Seashore (1967) looked upon these factors as a type of feedback and self-corrective adjustment. Weiss and Jacobson (1955) and Weiss (1954), noted in their study of the governmental agency mentioned earlier (Ch. 7), that if the supervisor of a work group failed to fulfill the needed liaison role for his group, some other member would often take over this necessary communication function.

To counteract this tendency and to bring the subordinate (and superior) nearer the decision making point, power commensurate with responsibilities could be delegated to lower levels of the organisation. Good communications are as important at the bottom of an organisation, as at the top.

It is interesting to note, that the firm which (in my opinion) believed most strongly in this doctrine - and practised a form of

management by objectives - had the highest perceived influence and trust scores of all the firms involved in the study (see Appendix 36 c and d).

Feedback Systems

Without feedback on his performance, the subordinate will find it difficult to control or correct his behaviour. When performance is perceived to be an important factor in promotions and salary increases, this "non-feedback" may lead to feelings of insecurity and distrust of the immediate superior (hypothesis 3c).

As might have been expected therefore, the firm with the most formalised system - performance appraisal with the subordinate present - had the highest trust scores of all the firms (Appendix 36c). Furthermore, only in this firm, did all the subordinates believe that their superior was the person most in touch with their problems - an indication that they felt the feedback system to be working both ways (see Appendix 32a).

However even with this system there was some reluctance on behalf of the superiors to appraise their subordinates*. As one manager expressed it:

"I really do not like doing his (the subordinate's appraisal) he has got the same experience, as good if not better qualifications, same background and age more or less - why should I play a little god."

The problem may be one of managerial style. When the superior believes that the aims of the organisation and the subordinate can meet, he can more easily take the step, recommended by such writers as Smith (1968), of allowing the subordinate to take a major part in deciding what should constitute good performance and what bad. Kay et al (1965) demonstrated that this method can reduce a lot of the "threat" felt during

* Rowe (1964) makes a similar point.

appraisal interviews, as had one of the managers in the study:

"I had one of my 'difficult' men come with me on someone else's appraisal to show him the Boss's view then I got him to fill in his own appraisal form and compare it with mine. It worked very well - I am sure it helped him realise his own weaknesses without my having to point them out. It is a great value to communications - with a frank talk - maybe clear the air. I quite enjoy it."

As this sort of participation should make the subordinate feel closer to the decision-making point, any inadequacies in the authority and responsibilities of the superior may be high-lighted in the eyes of the subordinate. Thus one type of organisational change might precipitate another. One of the advantages of feedback at all levels, is that weak points may be brought into clearer perspective and corrective action taken.

Status Symbols

Status differentiation in industry is commonly achieved by the use of symbols (eg. Dalton 1964, p 101 mentions the carpeted floor, while Katz et al 1950 refer to the executive dining room). Although this topic has received considerable attention in the news media, it has usually been of a comic nature (eg. Musgrave 1969, Sunday Times, 1968). With the amount of time and money spent in establishing equity in the system, it is perhaps surprising that almost no research work has been done on measuring its effects. One firm's grading system was introduced thus:

"Considerable thought has been given to the most equitable manner in laying down guidelines for the seniority and status of the company's staff."¹

Thompson (1965, p 18) writes that it seems reasonable to presume that a "perks system" forms part of a reward system for better performance, while Scott (1968) writes of "perks" being given in lieu of salary increments². In this study however, it was found that those firms with

1 This firm had the most elaborate status system of all the firms involved (see Appendix 36a).

2 The researcher was unable to compare the salaries of the managers in the firms to ascertain if "perks" were given in lieu of salary.

an elaborate system of status symbols had managers of no better past achievement than firms with less elaborate systems (Tables 15.1 and 15.7). Judging by the comments of the managers in the two firms at opposite ends of the status differential scale, considerable rationalisation of the firms' philosophy had occurred after the managers had settled down into the existing scheme. In both of these firms most of the managers interviewed had become content with their respective systems even though the "logic" behind them was often in direct conflict. Thus a manager from the "status free" factory commented:

"The British canteen system is disgusting and humiliating - saying to someone - 'You're not good enough to eat with us'."

While a manager from the firm with the most elaborate system stated that:

"We feel that toilets and works canteens come into the same category, a place where any employee can go and shout his mouth off and not worry about being overheard. By the same token the top executives can discuss confidential matters in their own toilet without being overheard."

Table 15.7

Interrelations of Status Symbols with other Variables

	Statistic	Value	N	p	Appendix
Work Life Mobility Rate	r	- 0.02	82	>0.90	34g
Desire for Promotion	τ	+ 0.73	6 ¹	0.03	33c
Accuracy in Upward Communication	r	+ 0.06	53	I	34h

The elaboration of the "visible" status system tended to have adverse effects among the firms studied. The desire for promotion (at the expense of obtaining more creative work, long term training etc. Appendix 5, section F) was greater as the elaborations increased (Table 15.7) giving support to Veblens (1934) theory that (hypothesis 6c),

1 Only in 6 firms were the status symbols studied.

"the existing system of status stratification is, itself, a fundamental source of mobility motivation".

Table 15.8

Interrelations of Desire for Promotion with other Variables

	Statistic	Value	N	p	Appendix
Perceived Influence	χ^2	(+) 9.64	59	<0.01	31h
Supervisory Level of Superior	χ^2	(+)10.89	61	<0.01	31g
Difference in Superior-Subordinate Age	χ^2	(+)11.06	52	<0.01	31i
Difference in Social Background	χ^2	(+) 4.85	46	0.08	31j
Difference in Length of Education	r	+ 0.03	61	>0.90	34j

Other visible status differentials had the same effect of increasing the desire for promotion (Table 15.8) viz. perceived influence, supervisory level, age difference and social background difference. It may be significant that educational differences had absolutely no effect on the promotional desire. It may be argued that, in Britain, this is the least visible of the variables studied.

Although the status symbols did not affect the communication accuracy score directly (hypothesis 2c, Table 15.7), it has been already pointed out (see page 105) that strong promotional desires of this sort could cause subordinates to restrict adverse information about themselves in attempting to create a "rosy picture" to their superiors (Table 14.1, hypothesis 2e).

Firms with an intricate "honours" system, thus tended to create managers with stronger promotional desires. If these managers experienced little promotion, then a mismatch of need and achievement might occur. To avoid considerable dissatisfaction an alternative outlet might be sought (a psychological substitute).

One substitute for upward movement can be upward communication.

Whereas managers with little mismatch of need and achievement kept their communications to reasonable levels, managers with a greater need for a psychological substitute communicated more frequently with their superiors (Table 15.9, hypothesis 6e).

Table 15.9

Interrelations of Need for a Substitute for Promotion with
other Variables

	Statistic	Value	N	p	Appendix
Communicating Frequency with Immediate Superior	χ^2	(+) 5.14	59	<u>0.07</u>	31h
Communicating Frequency with Both Superiors	χ^2	(+) 5.04	59	<u>0.08</u>	31i
Status Symbols	r	+ 0.19	58	<u>0.08</u>	34k
Perceived Influence	r	+ 0.16	58	I	34k
Supervisory Level	r	- 0.15	59	I	34k
Difference in Superior-Subordinate Age	r	- 0.01	53	>0.90	34k
Difference in Social Background	r	+ 0.10	45	I	34k
Difference in Length of Education	r	+ 0.20	53	<u>0.07</u>	34k

This finding is somewhat different from the simple instrumental theory (described on page 35) which suggests that communicating frequency would be higher towards persons of high perceived power. The results shown in Table 15.6 reject this hypothesis. An alternative explanation is possible from the literature, the use of the word "psychological" may be misleading. The managers dissatisfied with their rate of achieving promotion may consciously "over-communicate" with their superiors to draw attention to themselves and to ensure that they are not forgotten especially when promotions are imminent.

It is worth noting in Table 15.9 that although the "perks system" did increase this need for a substitute, few of the other status differences (perceived influence, supervisory level and background differences) had

any effect. It may be again that the important factor is one of visibility of the status difference and that the perception of visibility may vary according to the context.

Although this study did not extend to the shop floor, Zweig (1961) writes of workers in this age of higher education having severely limited promotional opportunities. If they have similar desires for advancement as do the managers, then, like the managers, these desires may be increased by elaborate symbols devised primarily for managerial motivation and not for worker motivation. Their need for a substitute may be increased by these systems - as they are for the managers (Table 15.9, hypothesis 6d) and one form their substitute might take could be stronger demands for wage increases and industrial recognition eg. in the form of trade unions. Hunt (1948, p 316) quotes a survey of several hundred American companies which tried to assess the value of profit sharing as a means of promoting industrial peace. 9.9% of those companies practising profit sharing at all levels had experienced recent strikes while 23.4% of those companies not practising profit sharing at any level had had strikes. However, of the companies having profit sharing for managers only - a status differential - 30.6% had had recent strikes.

It would seem easier for firms setting up new plants, to start operations with a "classless" factory. It was, however, noticeable that the older plants had more elaborate "perks systems" than younger factories. This finding may suggest that the pressures to add to existing status systems become progressively harder to resist*.

* The pseudo-scientific observations of Parkinson's Law of the Rising Pyramid (ie. that status improves through an increasing number of subordinates regardless of work load - Parkinson 1959, Ch. 1) and Peter's Rule that in a hierarchy every employee tends to rise to his level of incompetence (detectable by an obsessive attachment to such status symbols as communications gear, telephones, tape recorders, etc. - Peter and Hull, 1969), may have some basis in fact.

Organisational Performance

Bavelas and Barrett (1951) believe:

"It is entirely possible to view an organisation as an elaborate system for gathering, evaluating, recombining and disseminating information. It is not surprising, in these terms, that the effectiveness of an organisation with respect to the achievement of its goals should be so closely related to its effectiveness in handling information."

Drucker (1955, Ch. 5) on the other hand sees innovation as one of the prime objectives of any organisation and it can be argued that in electronics, a rapidly developing industry with a high rate of obsolescence, innovation may be the prime objective.

These two views did not conflict in the findings of this study. Of the 7 firms involved in this study, 4 had received the Queens Award to Industry for innovation*. It may be significant that the same 4 firms had the highest average communication accuracy score of the study (see Appendix 36b).

* Since the inception of the award in 1966, of an estimated 400 Scottish firms which have applied only 23 have been successful in the 4 year period up to the end of this study (1969).

CHAPTER 16DISCUSSION

The results of this study have generally supported the framework of interactions deduced from the literature (Chapter 10). In particular the importance of accurate communication to an individual manager's career achievement has been shown. Most of the study has concentrated on the factors affecting this accuracy both from an interpersonal and organisational viewpoint. Of particular relevance has been the finding that promotionally minded subordinates tend to restrict or distort their communication to their superiors, presumably in an effort to maximise the positive aspects or successes of their assignments. This planned structuring of information was also visible when considering the amount of trust existing between the managerial pair. Thus subordinates who distrusted their superiors also restricted their communication, perhaps by withholding information which they felt their superiors might use against them.

The final area of interest uncovered in this study could perhaps be best described under the term empathy* or communication ability. A number of interrelationships suggested this finding. Thus the longer the period of education the subordinate had received the more accurate his communication tended to be. Similarly the more feedback involved between the managerial pair, the better the listening ability of the superior, and the higher the managerial style of the subjects the more accurate was communication. To generalise, the more subjects listened, fed back information, and attempted to see the points of views of others,

* The term is defined in Appendix 51.

the more accurate was the communication they received, and the more trust was generated among their colleagues.

Implications of this Study

This study has produced considerable evidence of distorted information being passed up industrial hierarchies from one level to the next. The amount of distortion was especially noticeable when subordinates had a strong desire for promotion, little trust in their boss and when the superior was low in "communication skills".

Most industrial concerns have to make regular assessments concerning staffing, stock levels, performance appraisals and the like. Unless one assumes that the managers making these decisions have adequate sources of information other than their subordinates, then these decisions will be taken without a clear perspective of the actual problems involved. Furthermore, the subordinate who insulates his superior from a clear knowledge of his work problems also insulates himself from whatever expert knowledge and influence the superior might apply in solving the difficulties.

This study has concentrated on distortions subordinates may apply in communicating with their superiors, but superiors may also distort information received from their juniors. It could be possible that superiors anxious about their own promotion might modify and screen information from their subordinates as, for example, when their subordinates' problems interfere with a "trouble free" image they are seeking to establish. On the other hand there are a number of findings which could benefit industrial organisations. Managers might be motivated to communicate more accurately if they appreciated that this could lead to faster rates of promotion for themselves and better overall performance for their firm.

Few of the recommendations which suggest themselves from this study (increased delegation, improved feedback, training for role playing and managerial style improvement) would have many dissenters among managers. A recommendation that might produce some controversy is that the status differentials in industry (office furniture, works/management canteens etc.¹) should be reduced in an attempt to decrease the disfunctional effects of promotion seeking mentioned in Chapter 14. The review of the literature suggests that managers would resist attempts to have their status reduced by having their "perks" taken away from them. It was noticeable however, that the management teams in the study who worked in "status free" companies, expressed as much satisfaction with their firms as did managers from firms with elaborate status divisions. It may be that among the technically orientated managers of the electronics industry the status derived from successful task achievement is a more important reward than the trappings of status symbols.

Methodological Improvements

The social scientist's understanding of organisations advances with new insights gained and with improvements in methodology. This thesis has already described the findings resulting from this study and some methodological improvements have been accomplished. Nevertheless in the course of this study there have emerged a number of new areas in which more research and improved methodology would constitute worthwhile research.

Managerial Style

It would appear that the projective self assessment of managerial style used in this study² has considerable advantages over the methods

1 See Appendix 13.

2 See Appendix 19.

used by Blake and Mouton mentioned on page 99. Their methods of group discussions followed by self assessment and group assessment are time consuming and liable to bias. The projective method used in this study attempts to reduce the time needed and the degree of bias.

The questions used in this section of the questionnaire could, however, be developed in two ways. Firstly the questions could be reworded to mirror more accurately the grid styles involved. Secondly, additional projective questions could be used to refine the accuracy of the managerial grid and lift grid theories from their limiting dependence on placing all managers into one of five categories. In this study for example four more locations were added to the basic five.

Organisational Performance

The results described on page 123 only indicate the possible relevance of communication effectiveness for organisational performance. The commonly held belief that effective communication leads to improved organisational performance has yet to be tested. The communication measure of this study (Appendices 5 and 6, Section C) could be used, but an objective measure of company performance is required to test this hypothesis. Growth rate and profitability are two possible measures as are the widely accepted accounting techniques used in inter-firm comparison*.

Status Symbols

Although the measurement used (See Appendix 13) did prove relevant, there were a number of status differentials which were not incorporated into the scale of Appendix 13. The ones most mentioned by the managers were:

* See for example Batty (1963, Ch. 17).

- a) Punishment for lateness if any. Often workers had to "clock in" and had pay deducted for lateness, while acceptable staff lateness seemed to vary with their level in the hierarchy.
- b) Length of holidays.
- c) Sickness benefits.
- d) Employee grading.
- e) Employee "titles".
- f) Extra-factory perquisites - eg. company car.
- g) External telephone calls. Often workers were only allowed to use the telephones for emergencies while staff would use them openly for more trivial matters.
- h) Pay.

It may be remembered that the concept of the perceived visibility of these differentials was suggested as an important factor in estimating the effect of status differentials on such things as the desire for promotion etc. A factor analysis of a fuller list of status differentials might be made to gauge the relative importance of each differential in the communication process.

It seems also possible that larger firms might support more elaborate systems of status differentiation than smaller companies so that increased desires for promotion might seem to be a function of size as much as elaborate status differentiation. Argyris (1965) for example believes that climbing the organisational ladder is an adaptive mechanism in reaction to the impact of large scale organisations on individuals. Comparing the desire for promotion among managers selected from firms of widely differing size might therefore produce interesting results.

Communicating Frequency

Like the status differential measures described above, the frequency

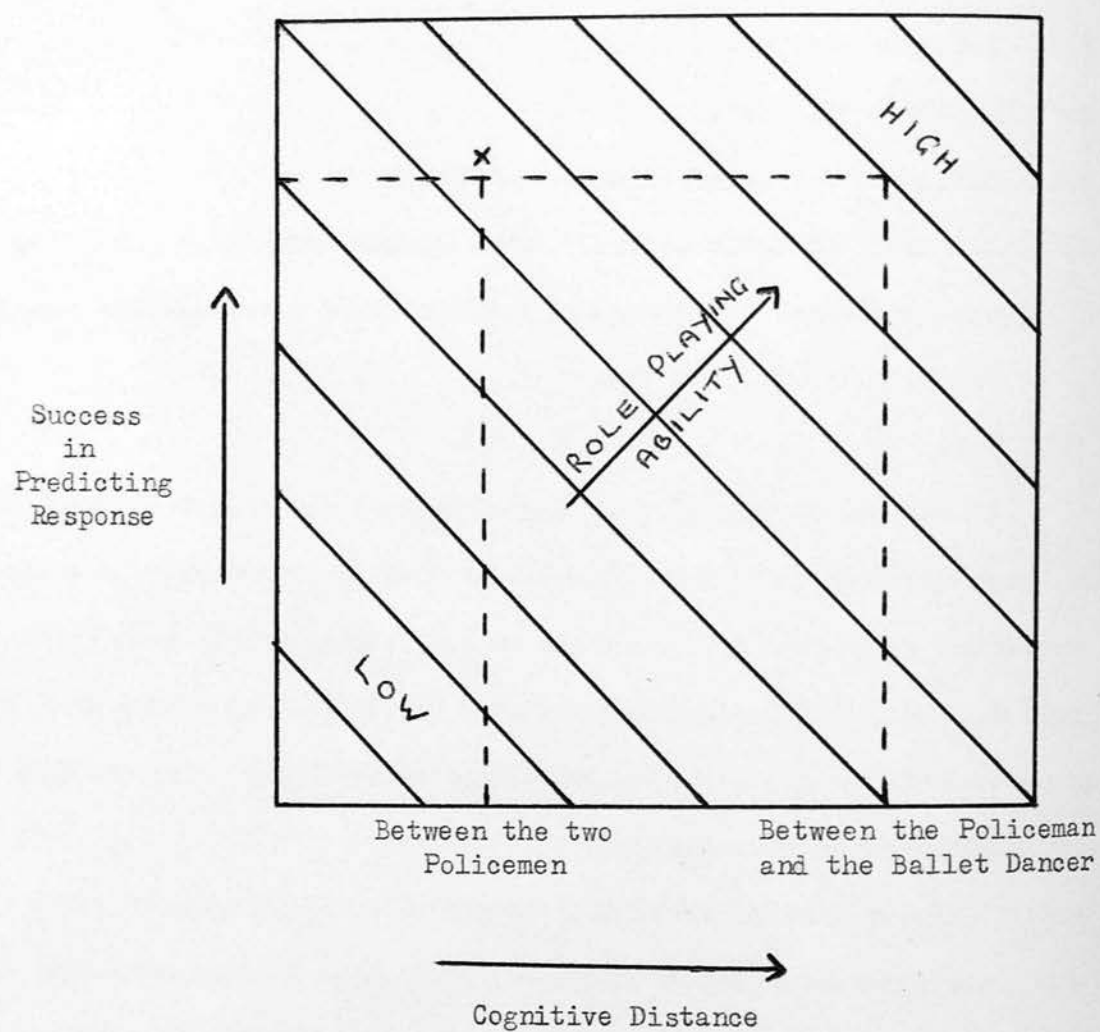


Figure 16.1

measurement used in the study produced findings which fitting into the hypothetical relationships postulated in Chapter 10. It would seem profitable, however, to incorporate the time involved in the various methods used (memo, telephone etc.) and to factor analyse these results to gain clearer insights into the relationships suggested by this study. Furthermore, although an attempt was made to remove "distance" from the factors studied, "difficulty" in communicating could not be eliminated. To what degree communication problems may be caused by physical distance or through the intended receiver being "always too busy to see anyone" would be of considerable importance in environmental planning*.

Role Playing Ability

The literature reviewed in Chapter 7 defined role playing ability as the ability to predict attitudes or responses to set questions. It was suggested that this definition had limited application because it did not take into account the individual's difficulty in making these predictions. Thus it may be a lot easier for a policeman to predict another policeman's attitudes than for a policeman to predict the attitudes of a ballet dancer. If, however, one of two policemen was able to make accurate predictions of both a policeman's and a ballet dancer's attitudes, it would seem reasonable to believe that he showed the greater role playing ability (by bridging a greater gap between frames of reference).

It is suggested that a more logical measure of role playing ability would be gauged on the success of predictions considered with the cognitive distance over which the predictions had to be made. Assuming

* It is interesting to note here that a common complaint made against open plan factories is that too much communication occurs. In this study only one firm had complete open planning and their frequency of communication was the lowest of all the firms studied - not the highest as might have been predicted.

that the two measurements were independent, the opposite diagram might result. Thus in terms of the above example if one assumes that the cognitive distance between the two policemen is smaller than between the policeman and the ballet dancer, equally successful predictions would indicate better role playing ability over the policeman-ballet dancer link (position Y) than over the policeman-policeman link (position X).

The use of measures such as this could be of value in assessing the success of "sensitivity training". Before-after questionnaires might indicate the degree to which trainees have improved their role playing ability.

Extending the Research

There are several facets of this study which could be made clearer by involving a larger number of managers in subsequent field work. For example the managerial grid used, provided 9 positions for the categorisation of the sample of the 61 subordinate managers who returned the questionnaire. On a random basis, one might have expected around 7 managers to fall into each category; in fact no managers fell into the 9,9 style and only 2 came into the 9,5 style. Perusal of the appendices should enable reasonably sound estimations to be made of the sample size required to enlarge upon the present findings.

Simultaneously with the expansion of the study of upward communication similar methodology could be used to gauge downward and horizontal communication, although the load on the individual manager filling in numerous questionnaires may become too great for carefully considered responses. Apart from extending the research there are several new areas of investigation which would seem to be potentially rewarding. The need for a substitute for promotion (discussed on page 121) is one such area. The review of the literature suggested that this need may

result in industrial unrest among workers and in nervous illnesses among managers. These factors seem worthy of future research*.

A factor found to affect the need for a substitute for promotion was the amount of status differentiation found in each plant. It would be interesting to assess the effect on individuals who had recently moved between different systems; this could be borne in mind when examining subsequent questionnaires. Similarly cross-cultural as well as cross-industrial and interplant comparisons would seem worthy of investigation. Already in existence is a considerable amount of research done in a number of countries (eg. Haire et al, 1966). Although little of the detailed results have found their way into published articles, personal contact with the researchers involved could produce important insights - reducing the need for time consuming field work.

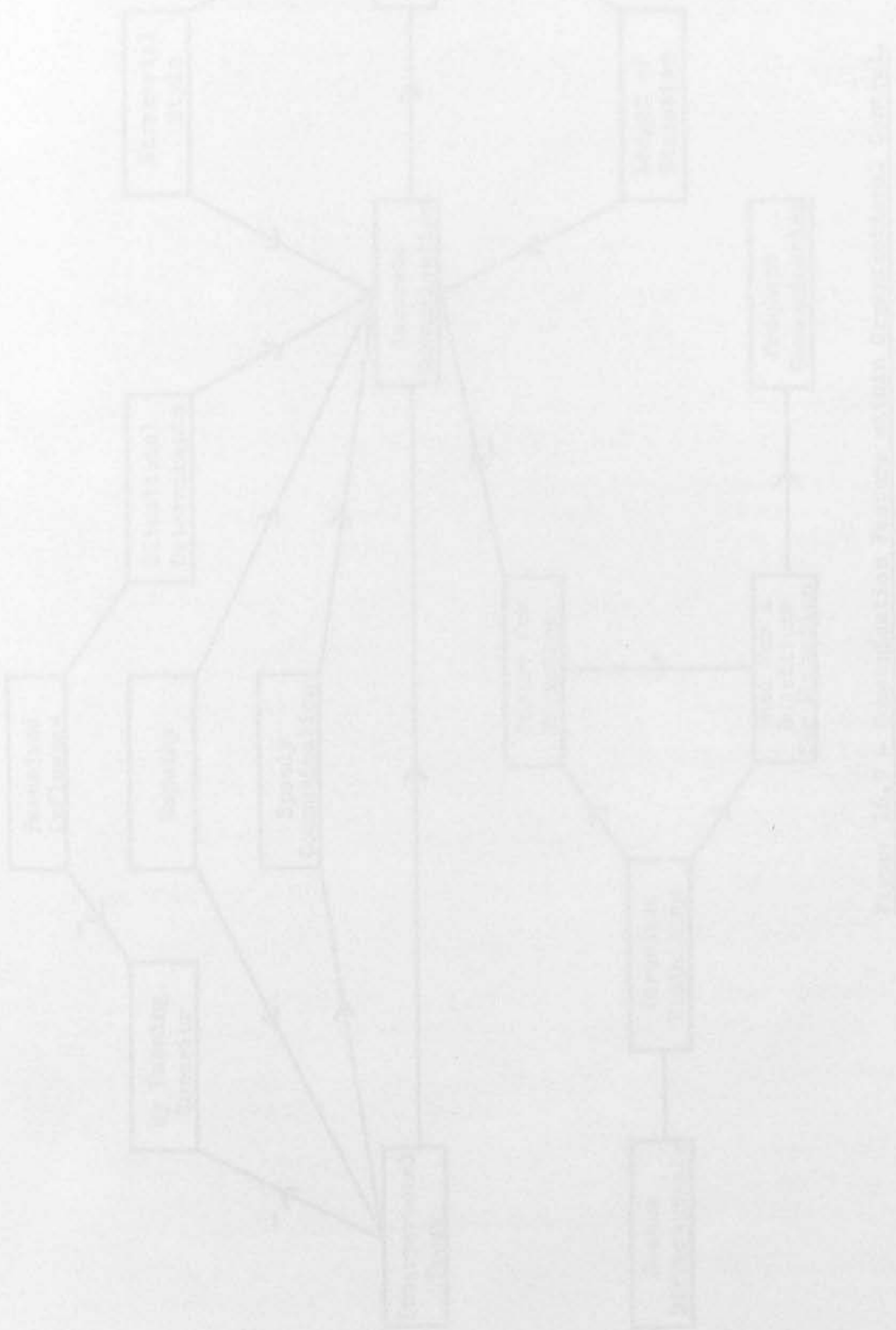
Concluding Comments

In studies of large scale organisations such as business and industry, communication processes are usually of both theoretical and practical concern, particularly where these processes relate to systems of control and authority.

Simon (1957, p 236), among others, believes that organisational problems are always, in some way, communication problems and are usually explicable in terms of barriers to effective communication. The central dilemma is that the highly integrated effort required to achieve complex organisational objectives, demands a structuring of function and authority. The very imposition of such structures may inhibit the free flow of information needed to carry out the involved goals of the organisation. This research has generally confirmed these beliefs but

* For an introduction to the measurement of these variables see Knowles (1968, Ch. 5).

has also pointed to ways of gradually reducing their dysfunctional effects. Figure 16.2 shows in a schematic fashion some of the factors under organisational control suggested by the data and the interactional pattern that was observed among the managers in this study.



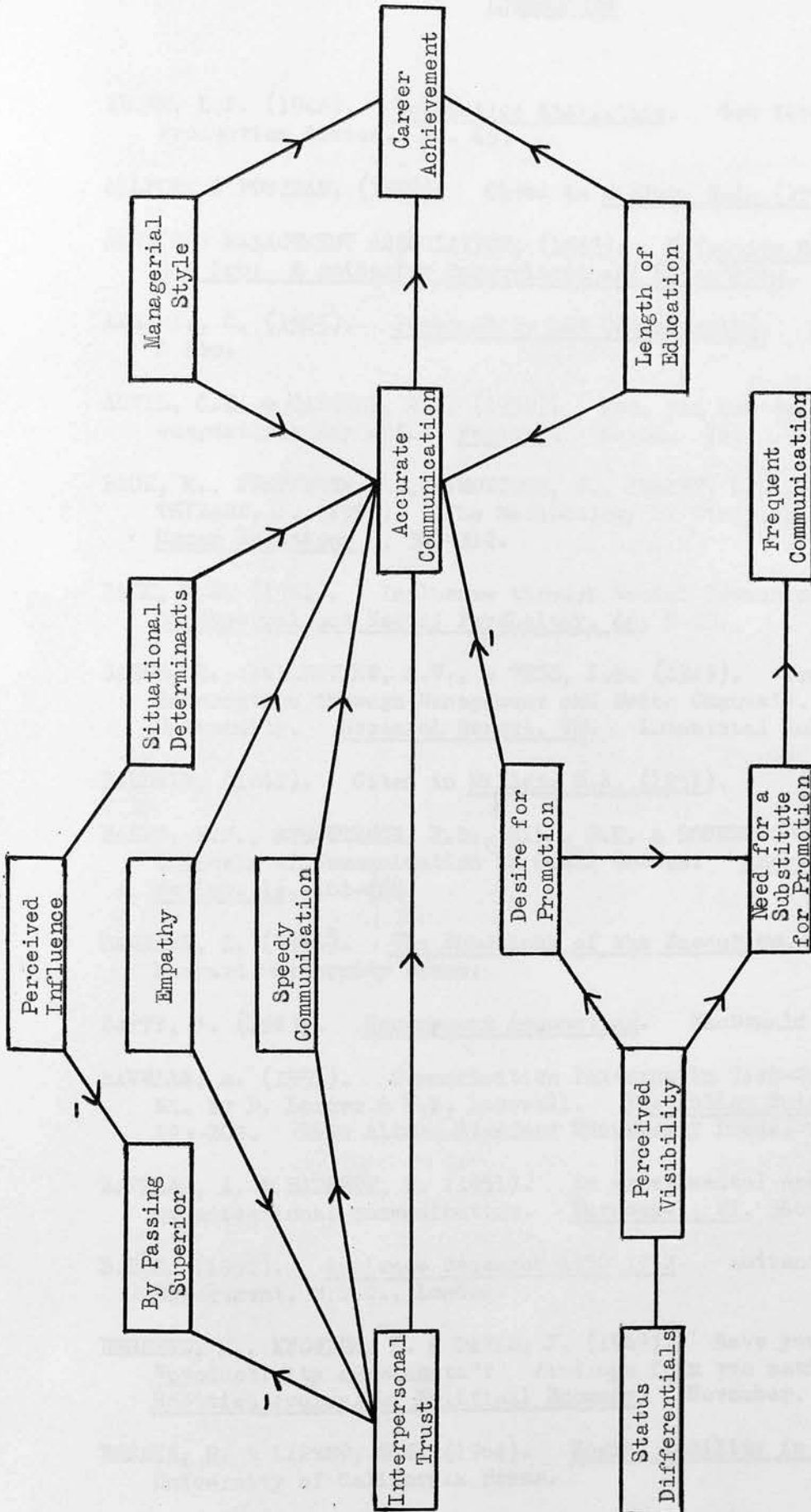


Figure 16.2 - Communication Factors within Organisational Control.

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2-1st Schedule (Kardex, 1969, Type Bounded)

2-2nd Schedule (Kardex, 1969, Type Bounded)

2-3rd Schedule (Kardex, 1969, Type Bounded)

2-4th Schedule (Kardex, 1969, Type Bounded)

(During the interview, please feel free to make any comments)

2-5th Schedule (Kardex, 1969, Type Bounded)

1. Name

2. Address

3. How long have you been in this job?

4. What is your main job?

5. What is the main reason for this?

6. How long has he been your boss?

2-6th Schedule (Kardex, 1969, Type Bounded)

1. (Age - previously obtained)

2. (How many times have you been married?)

3. (How many times have you been married?)

4. (How many times have you been married?)

5. (How many times have you been married?)

6. (How many times have you been married?)

7. (How many times have you been married?)

APPENDIX 1MANAGEMENT COMMUNICATIONS STUDY

Pilot Schedule (March, 1968, Tape Recorded)

Date 196

Subordinate Interview

Code / /s

(During the interview, please feel free to make any comments)

SECTION A

1. Name
2. Position
3. How long have you been in this job?
4. What is your boss's name?
5. What is his position called?
6. How long has he been your boss?

SECTION B

1. (Age - previously obtained)
2. Could you tell me briefly about your educational and career background?
3. What interests do you have after work?
4. Has Mr. (Boss) previously held this job?
5. For about how long?
6. Is anyone trained to do your job right now?
7. (If yes) Who?

SECTION C

(As we go through these questions I'll be taking some notes so that when you've finished, you can rank the various points in order of their importance as you see them).

1. Could you give me a fairly detailed outline of the duties and responsibilities involved in your job?
2. What abilities would you look for in a trainee for your job?
3. What future changes do you expect in your job in the next couple of years?
4. What are the main difficulties involved in your job?
5. Would you now rank these activities in order of their importance to you?
6. Under what circumstances do you have to report to Mr. (Boss) immediately?
7. Are there any areas in which more responsibility would help you with your present job?
8. Are there any areas in which less responsibility would help you with your present job?

SECTION D

1. How did you find out what you are supposed to do in your job?
2. To give this study a really practical approach I'd like you to tell me of any examples of the effects of good or bad communications.
3. If you were training someone for your job, how would you like to do it?
4. How long did it take you to define the limits of your job?
5. How well do the other departments liaise with you?

SECTION E

1. Do you feel that you know the company's overall policy?
(eg. to staff, public, etc.)
2. How competitive is the market in which the company operates?
3. How does this affect you personally/the operations?
4. Could you explain how your salary changes are brought about?
5. How does your boss communicate with you?

Anything else you'd like to add?

APPENDIX 2MANAGEMENT COMMUNICATIONS STUDY

Pilot Schedule (March, 1968, Tape Recorded)

Date 196

Boss Interview

Code / /B

(During the interview, please feel free to make any comments)

SECTION A

1. Name
2. Position
3. How long have you been in this job?
4. What is your subordinate's name?
5. What is his position called?
6. How long have you been his boss?

SECTION B

1. (Age - previously obtained)
2. Could you tell me briefly about your educational and career background?
3. What interests do you have after work?
4. Have you previously held Mr. (Sub's) job?
5. For about how long?
6. Is anyone trained to do his job right now?
7. (If yes) Who?

SECTION C

(As we go through these questions I'll be taking some notes so that when you've finished, you can rank the various points in order of their importance as you see them).

1. Could you give me a fairly detailed outline of the duties and responsibilities involved in Mr. (Sub's) job?
2. What abilities would you look for in a trainee for his job?
3. What future changes do you expect in his job in the next couple of years?
4. What are the main difficulties involved in his job?
5. Would you now rank these activities in order of their importance to you?
6. Under what circumstances do you expect Mr. (Sub) to report to you immediately?
7. Are there any areas in which more responsibility would help him with his present job?
8. Are there any areas in which less responsibility would help him in his present job?

SECTION D

1. How did Mr. (Sub) find out what he is supposed to do in his job?
2. To give this study a really practical approach I'd like you to tell me of any examples of the effects of good or bad communications.
3. If you were training someone for Mr. (Sub's) job, how would you like to do it?
4. How long did it take you to define the limits of your job?
5. How well do other departments liaise with Mr. (Sub)?

SECTION E

1. Do you feel that you know the company's overall policy?
(eg. to staff, public, etc)
2. How competitive is the market in which the company operates?
3. How does this affect you personally/the operations?
4. Could you explain how Mr. (Sub's) salary changes are brought about?
5. How do you communicate with him?

Anything else you'd like to add?

APPENDIX 3Electronic Firms - Edinburgh Area¹

Company	Telephone Number
A.E.I.	Kirkcaldy 51011
B.E.P.I.	Galashiels 3367
Beckman Instruments	Glenrothes 3811
Bourns (Trimpot)	Inverkeithing 3221
Cables & Components	Inverkeithing 3101
Dynamco Instruments	Broxburn 2631
Elliott Bros. (London)	201.3381
Emihus Microcomponents	Glenrothes 2261
Exactra Circuits	Galashiels 3396
Ferranti	663.2821
Findlay Irvine	Penicuik 111
General Instruments Microelectronics	Glenrothes 2640
Glencoe Automatics	Kirkcaldy 4458
Hewlett-Packard	South Queensferry 581
Highland Electronics	Inverkeithing 3793
Microwave Electronic Systems	Kirkliston 277
Microwave Systems	663.3807
Nuclear Enterprises	443.4060
Porter & Gordon (Electronics)	Inverkeithing 2709
Spectra-Physics	Glenrothes 3821
T.C.C.	Bathgate 3511
Varian Associates	Inverkeithing 3121

1 Telephone Directory Section 142, 1968.

APPENDIX 4Introductory Letter

Tel: 031.667.1011
Ext. 6577

Department of Business Studies,
William Robertson Building,
University of Edinburgh,
50 George Square,
Edinburgh, 8.

5th September, 1968.

Mr. J.A. Bloggs,
Managing Director,
Crunch Machines Ltd.,
Queens Industrial Estate,
Newtown,
North Lothian.

Dear Mr. Bloggs,

Along with many other people in industry, I have become interested in the problems of management communications. I have been studying aspects of this topic for over a year now and have visited several firms to date.

I would be very grateful to obtain your views on the subject and to go over my own ideas. At present I am just completing tests on a short (20 minutes) "Communication test" which gauges the relative strengths and weaknesses of individual communication links.

Yours sincerely,

T.M. LILLICO
Research Fellow

APPENDIX 5MANAGEMENT COMMUNICATIONS STUDYQUESTIONNAIRE (OCT. 1968)

Date 196

Code / /s

(Please feel free to add any comments)

ALL answers will be held in strict confidence.

SECTION A

1. Name
2. Position
3. How long have you been in this job?
4. What is your boss's name?
5. What is his position called?
6. How long has he been your boss?
7. Has Mr. (Boss) previously held your type of job?

SECTION B

1. Date of birth
2. Could you tell me briefly about your educational and career background? (eg. left school at _____ years of age, courses attended, worked with _____ company as _____ for _____ years)
3. What was the first job that you held which lasted 6 months or more?
4. When you were in your teens, what was your father's usual occupation?

SECTION C

Who is in the best position to know about the problems you have in your job? (tick one ✓)

..... my associates

..... my boss

..... others, if so, whom

Below is a listing of problems that managers in business and industry frequently must deal with in their work. Please rank order these problems within each section below in terms of how much difficulty they cause you. Simply write in the number "1" beside the problem that gives you most difficulty, "2" beside the next most difficult and so on. Rank order the problems separately within each section.

(Your responses will, of course, be kept in strict confidence.)

Co-ordination and Communications

Maintaining good co-ordination of effort with other units in the company.

Overcoming the resistance of other units to my ideas and methods.

Keeping other units in the company supplied with information.

Obtaining enough information from other units in the organisation to meet my objectives.

Getting enough information from management about future changes and plans.

Getting quick action from management on my problems.

Obtaining enough authority to carry out my responsibilities.

Budget and Cost

Handling unforeseen costs.

Keeping my staff cost conscious.

Keeping overtime costs down.

"Selling" my boss on certain budget expenditures.

Deciding on the feasibility of certain expenditures.

Technical

Dealing with technical set-backs (such as breakdowns) in my unit.

Getting enough equipment and supplies.

Keeping abreast of technical developments and changes.

Getting service or maintenance for my unit.

Dealing with rapid changes in production, scheduling or work-flow.

Pressures and Deadlines

Dealing with constant interruptions.

Handling a great deal of paper-work and routines.

Dealing with constant deadlines (reports etc.).

Getting enough time to think and plan.

Keeping records up-to-date and in order.

Administration and Supervision

Communicating sufficient information and ideas to subordinates.

Getting subordinates to follow methods that look arbitrary to them.

Keeping absenteeism down.

Maintaining a high level of motivation among subordinates.

Maintaining good relations with subordinates who differ widely in temperament and personality.

Getting enough time to train subordinates.

Scheduling the work in the most efficient way.

CONFIDENTIAL:SECTION D

1. In general, how much do you feel that your boss can do to further your career in this company?
(tick one ✓)

..... he can do a very great deal

..... quite a lot

..... a fair amount

..... not much

..... he can do nothing

2. How much weight would your boss's recommendation have in any decision which would affect your standing in the company, such as promotions, transfers, wage increases, etc?
(tick one ✓)

..... a great deal of weight

..... quite a lot

..... a fair amount

..... not much

..... no weight at all

3. How successful could your boss be in stopping you in getting the things you need in your job such as equipment, personnel, etc?
(tick one ✓)

..... he could always be successful

..... very successful

..... fairly successful

..... not very successful

..... he could never be successful

CONFIDENTIALSECTION E

1. Does your boss take advantage of opportunities that come up to further your interests by his actions and decisions?
(tick one ✓)

..... he takes every opportunity he can

..... very often

..... sometimes

..... not very often

..... he never takes the opportunity

2. How free do you feel to discuss with your boss the problems and difficulties you have in your job without jeopardizing your position or having it "held against you" later on?
(tick one ✓)

..... I feel completely free to discuss my problems

..... very free

..... fairly free

..... not very free

..... I do not feel at all free to discuss my problems

3. How confident do you feel that your boss keeps you fully and frankly informed about things that might concern you?
(tick one ✓)

..... I feel completely confident

..... very confident

..... fairly confident

..... not very confident

..... I do not feel at all confident

SECTION F

Imagine you are faced with the following alternatives. Taking the limited information provided, make a decision as to which one you would choose and indicate your choice with a check mark in the box beside the chosen alternative. This is not a test and there are no right answers. Please do not try to be "consistent" - treat each set of two alternatives separately. Your answers will be held in strict confidence.

- | | | | | | |
|----|---|--------------------------|----|---|--------------------------|
| 1. | Promotion to a higher-level position in which there is a great deal of pressure and stress | | OR | Transfer "across" to an intensely interesting position with little work pressure and stress | |
| | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| 2. | Work in a position equivalent to your present level, which assures you of a clear and continuing place in the organization | | OR | Work in a higher-level position in which the future looks quite uncertain | |
| | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| 3. | Work in a position equivalent to your present level, which gives you an unusually great degree of freedom to do the things you would like to do | | OR | Work in a higher-level position which has considerable limitations on the freedom given you | |
| | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| 4. | Work in a position equivalent to your present level in which you would have a very liberal operating budget | | OR | Work in a higher-level position with a "tight" budget | |
| | | <input type="checkbox"/> | | | <input type="checkbox"/> |
| 5. | Promotion <u>now</u> to a higher position for which you are not quite sure you are ready in terms of skill and experience | | OR | Transfer "across" to a position which is known to provide long-term training for future promotion | |
| | | <input type="checkbox"/> | | | <input type="checkbox"/> |

- | | | |
|---|----|--|
| 6. Transfer "across" to a position in which you would have a congenial, hard-working group of employees working for you | OR | Promotion to a higher-level position in which you would have a group of temperamental, "problem" employees working for you |
| <input type="checkbox"/> | | <input type="checkbox"/> |
| 7. Promotion <u>now</u> to a slightly higher position in the organization | OR | Wait, knowing you are one of several being considered for a big promotion |
| <input type="checkbox"/> | | <input type="checkbox"/> |
| 8. Promotion to a higher-level position in which your new superior has the reputation of being a "holy terror" | OR | Work in a position equivalent to your present level with more limited promotion opportunities, but with a superior you enjoy working for |
| <input type="checkbox"/> | | <input type="checkbox"/> |
| 9. Promotion to a new higher position organized and developed by your new superior | OR | Transfer "across" to a new unit which you are required to organize and develop |
| <input type="checkbox"/> | | <input type="checkbox"/> |
| 10. Transfer "across" to a position requiring a lot of creativity and ingenuity | OR | Promotion to a higher position which has clear-cut established procedures |
| <input type="checkbox"/> | | <input type="checkbox"/> |

SECTION G

Please mark the adjective scales following, the way you personally feel about the job at the top of each section. There are, of course, no right answers - only individual opinions.

Each grade of the scale has the following approximate meaning:-

Very	Quite	Moderately	Quite	Very
------	-------	------------	-------	------

TEACHER

Clean	<div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"> </div> <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px;"> </div>	Dirty
Difficult	<div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"> </div> <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px;"> </div>	Easy
Desirable	<div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"> </div> <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px;"> </div>	Undesirable
High Position	<div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"> </div> <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px;"> </div>	Low Position
Requires much education	<div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"> </div> <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px;"> </div>	Requires little education
High Pay	<div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"> </div> <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px;"> </div>	Low Pay
Important	<div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"> </div> <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px;"> </div>	Unimportant
Sociable	<div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"> </div> <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px;"> </div>	Unsociable
Professional	<div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"> </div> <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px;"> </div>	Non-professional
Requires much experience	<div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"> </div> <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; height: 15px;"> </div>	Requires little experience

WELDER

Clean	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Dirty
Difficult	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Easy
Desirable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Undesirable
High Position	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Position
Requires much education	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little education
High Pay	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Pay
Important	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unimportant
Sociable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unsociable
Professional	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Non-professional
Requires much experience	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little experience

CLERK

Clean	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Dirty
Difficult	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Easy
Desirable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Undesirable
High Position	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Position
Requires much education	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little education
High Pay	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Pay
Important	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unimportant
Sociable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unsociable
Professional	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Non-professional
Requires much experience	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little experience

REPORTER

Clean	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Dirty
Difficult	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Easy
Desirable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Undesirable
High Position	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Position
Requires much education	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little education
High Pay	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Pay
Important	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unimportant
Sociable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unsociable
Professional	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Non-professional
Requires much experience	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little experience

POLICEMAN

Clean	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Dirty
Difficult	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Easy
Desirable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Undesirable
High Position	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Position
Requires much education	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little education
High Pay	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Pay
Important	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unimportant
Sociable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unsociable
Professional	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Non-professional
Requires much experience	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little experience

CONFIDENTIALSECTION H

1. How often do you communicate with your boss?

(please tick ✓ where appropriate).

	daily	weekly	monthly	yearly	never
informal meeting
formal meeting
telephone
memo
letter
report
socially

2. How often do you communicate with his boss?

(please tick ✓ where appropriate).

	daily	weekly	monthly	yearly	never
informal meeting
formal meeting
telephone
memo
letter
report
socially

Anything else you'd like to add?

SECTION I (Tape Recorded)

1. How status conscious do you feel the people within the company are?
2. Who makes most of the long term decisions affecting your job?
 - myself
 - my colleagues
 - my boss
 - his boss
 - others, if so, whom
3. How well do you feel that you know the company's overall policies?
 - with respect to the business world
 - " " " the employees
 - " " " the public
 - " " " your section
4. How did you find out what you were supposed to do in your job?
5. How long did it take you to define the limits of your job?
(PROBE - and how clear are you now?)
6. How competitive is the market in which the company operates?
7. How does this affect you personally/the operations?
(PROBE - any pressures and from whom?)
8. Could you explain how your performance is assessed?
9. Could you explain how your salary changes are brought about?
(PROBE - degree of participation in the appraisal - who recommends the changes?)
10. How much in common do you have with your boss?
(interests, background, etc.)

APPENDIX 6MANAGEMENT COMMUNICATIONS STUDYQUESTIONNAIRE (OCT. 1968)

Date 196

Code / /B

(Please feel free to add any comments)

ALL answers will be held in strict confidence.

SECTION A

1. Name
2. Position
3. How long have you been in this job?
4. What is your subordinate's name?
5. What is his position called?
6. How long have you been his boss?
7. Have you previously held his type of job?

SECTION B

1. Date of birth
2. Could you tell me briefly about your educational and career background? (eg. left school at ____ years of age, courses attended, worked with ____ company as ____ for ____ years)
3. What was the first job that you held which lasted 6 months or more?
4. When you were in your teens what was your father's usual occupation?

SECTION C

Below is a listing of problems that managers in business and industry frequently deal with in their work. Please rank order these problems within each section below in terms of how much difficulty they cause your subordinate. Simply write in the number "1" beside the problem that gives him most difficulty, "2" beside the next most difficult and so on. Rank order the problems separately within each section. (Your responses will, of course, be kept in strict confidence).

Co-ordination and Communications

Maintaining good co-ordination of effort with other units in the company.

Overcoming the resistance of other units to his ideas and methods.

Keeping other units in the company supplied with information.

Obtaining enough information from other units in the organisation to meet his objectives.

Getting enough information from management about future changes and plans.

Getting quick action from management on his problems.

Obtaining enough authority to carry out his responsibilities.

Budget and Cost

Handling unforeseen costs.

Keeping his staff cost conscious.

Keeping overtime costs down.

"Selling" his boss (you) on certain budget expenditures.

Deciding on the feasibility of certain expenditures.

Technical

Dealing with technical setbacks (such as breakdowns) in his unit.

Getting enough equipment and supplies.

Keeping abreast of technical developments and changes.

Getting service or maintenance for his unit.

Dealing with rapid changes in production, scheduling or work flow.

Pressures and Deadlines

Dealing with constant interruptions.

Handling a great deal of paper-work and routines.

Dealing with constant deadlines (reports etc.).

Getting enough time to think and plan.

Keeping records up-to-date and in order.

Administration and Supervision

Communicating sufficient information and ideas to subordinates.

Getting subordinates to follow methods that look arbitrary to them.

Keeping absenteeism down.

Maintaining a high level of motivation among subordinates.

Maintaining good relations with subordinates who differ widely in temperament and personality.

Getting enough time to train subordinates.

Scheduling the work in the most efficient way.

CONFIDENTIALSECTION G

Please mark the adjective scales following, the way you personally feel about the job at the top of each section. There are, of course, no right answers - only individual opinions.

Each grade of the scale has the following approximate meaning:-

Very	Quite	Moderately	Quite	Very
------	-------	------------	-------	------

TEACHER

Clean	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dirty
Difficult	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Easy
Desirable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Undesirable
High Position	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low Position
Requires much education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Requires little education
High Pay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low Pay
Important	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unimportant
Sociable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unsociable
Professional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Non-professional
Requires much experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Requires little experience

WELDER

Clean	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Dirty
Difficult	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Easy
Desirable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Undesirable
High Position	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Position
Requires much education	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little education
High Pay	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Pay
Important	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unimportant
Sociable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unsociable
Professional	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Non-professional
Requires much experience	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little experience

CLERK

Clean	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Dirty
Difficult	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Easy
Desirable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Undesirable
High Position	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Position
Requires much education	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little education
High Pay	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Pay
Important	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unimportant
Sociable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unsociable
Professional	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Non-professional
Requires much experience	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little experience

REPORTER

Clean	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Dirty
Difficult	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Easy
Desirable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Undesirable
High Position	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Position
Requires much education	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little education
High Pay	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Pay
Important	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unimportant
Sociable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unsociable
Professional	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Non-professional
Requires much experience	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little experience

POLICEMAN

Clean	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Dirty
Difficult	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Easy
Desirable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Undesirable
High Position	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Position
Requires much education	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little education
High Pay	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Low Pay
Important	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unimportant
Sociable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Unsociable
Professional	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Non-professional
Requires much experience	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Requires little experience

SECTION I (Tape Recorded)

1. How status conscious do you feel the people within the company are?
2. Who makes most of the long term decisions affecting your job?
 - myself
 - my colleagues
 - my boss
 - his boss
 - others, if so, whom
3. How well do you feel that you know the company's overall policies?
 - with respect to the business world
 - " " " the employees
 - " " " the public
 - " " " your section
4. How did you find out what you were supposed to do in your job?
5. How long did it take you to define the limits of your job?
(PROBE - and how clear are you now?)
6. How competitive is the market in which the company operates?
7. How does this affect you personally/the operations?
(PROBE - any pressures and from whom?)
8. Could you explain how your performance is assessed?
9. Could you explain how your salary changes are brought about?
(PROBE - degree of participation in the appraisal - who recommends the changes?)
10. How much in common do you have with your boss?
(interests, background, etc.)

APPENDIX 7Consistency Check - Letter Requesting Assistance

Tel: 031.667.1011
Ext. 6577

Department of Business Studies,
William Robertson Building,
University of Edinburgh,
50 George Square,
Edinburgh, 8.

5th October, 1968.

Mr. F. Springe,
Production Manager,
Crunch Machines Ltd.,
Queens Industrial Estate,
Newtown,
North Lothian.

Dear Mr. Springe,

I believe I told you on my last visit that I made a check on the reliability of my communication measure by asking a random 10% of the managers to do the ranking again.

As your name has come "out of the hat" I would be very grateful if you would do the ranking again (with regard to Mr. Slugger). I enclose the problem list and a stamped addressed envelope.

I hope to be out to your plant again in a couple of week's time when we may meet again.

Yours sincerely,

T.M. LILLICO
Research Fellow

APPENDIX 8Letter of Reminder

Tel: 031.667.1011
Ext. 6577

Department of Business Studies,
William Robertson Building,
University of Edinburgh,
50 George Square,
Edinburgh, 8.

5th November, 1968.

Mr. K.O. Slugger,
Production Foreman,
Crunch Machines Ltd.,
Queens Industrial Estate,
Newtown,
North Lothian.

Dear Mr. Slugger,

I am enclosing another set of questionnaires with a stamped addressed envelope in case the ones I originally gave you have been misplaced.

I would be very grateful if you could complete them and send them off to me. I appreciate how busy you are but the other half of the questionnaire, already completed, is of little use without yours to compare it with.

Yours sincerely,

T.M. LILLICO
Research Fellow

APPENDIX 11Occupational Level ScaleStandard Classification¹

1. Professional and High Administrative
(calling for highly specialized experience, and frequently the possession of a degree or comparable professional qualifications necessitating a long period of education and training).
2. Managerial and Executive
(responsible for initiating and/or implementing policy).
3. Inspectional, Supervisory and other Non-Manual, Higher Grade
(less responsibility than level 2 but having some degree of authority over others).
4. Inspectional, Supervisory and other Non-Manual, Lower Grade
(authority over others is restricted, but the nature of the job itself involves a measure of responsibility).
5. Skilled Manual and routine grades of Non-Manual
(special training or apprenticeship and responsibility for the process on which the individual is engaged).
6. Semi-skilled Manual
(no special skill or responsibility is involved, but the individual is doing a particular job habitually and usually in association with a certain industry or trade).
7. Unskilled Manual
(requires no special training and is general in nature rather than associated with a particular industry).

1 Glass (1966, Ch. 2)

The following pages give more details about the individual levels in the following manner:

- a) Typical Occupations¹
- b) Occupations Added
- c) Examples from the Research

Occupational Level 1

- a) Medical Officer Country Solicitor
Company Director Head of Large Public School
Chartered Accountant University Professor
- b) Superiors having more than 500 subordinates from levels 5 or below.
Superiors having more than 50 subordinates from levels 4 or above.
- c) Departmental Manager
General Manager

Occupational Level 2

- a) Personnel Manager Works Manager
Farmer Headmaster (Secondary School)
Nonconformist Minister University Lecturer
- b) Superiors having more than 200 subordinates from levels 5 or below.
Superiors having more than 20 subordinates from levels 4 or above.
- c) Production Manager
Police Superintendent

Occupational Level 3

- a) Police Inspector Assistant Teacher (Secondary School)
Jobbing Master Builder
Headmaster (Elementary School) News Reporter
- b) Superiors having more than 100 subordinates from levels 5 or below.
Superiors having more than 10 subordinates from levels 4 or above.
- c) Project Engineer
Maintenance Superintendent

1 after Hall & Jones (1950)

Occupational Level 4

- a) Costing Clerk Insurance Agent
 Chef Newsagent
 Assistant Teacher (Elementary School)
- b) Superiors having more than 10 subordinates.
 University Undergraduate
- c) Workshop Supervisor
 Senior Draftsman
 Bank Teller

Occupational Level 5

- a) Policeman Shop Assistant
 One Man Business Fitter
 Carpenter Routine Clerk
 Bricklayer Apprentice
- b) College Undergraduate
- c) Maintenance Welder
 Engine Driver
 Weaver

Occupational Level 6

- a) Tractor Driver Railway Porter
 Carter Coal Hearer
 Agricultural Labourer
- b) None
- c) Chauffeur
 Lorry Driver
 Dairy Man

Occupational Level 7

- a) Barman Road Sweeper
 Labourer
- b) None
- c) Factory Worker

APPENDIX 12Educational Level Scale

This scale is based on the number of years of full time education experienced by the subjects (or an estimated equivalent).

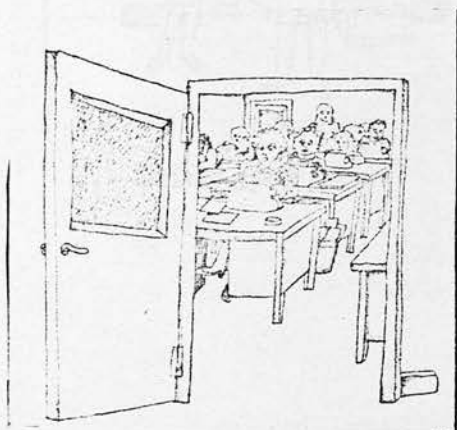
Type of Education	Score
School (the exact number of years)	-
Apprenticeship	1
Intermediate City & Guilds	1
O.N.C.	1
Final City & Guilds	2
H.N.C.	2
Board of Trade Certificates	2
College Associateship 1 subject	3
2 subjects	4
University Degrees Ordinary	3
Honours	4
Diploma	1
M.Sc.	2
Ph.D.	3

Example

Subject left school at 18	-	score	13
Subject gained Honours degree-		score	<u>4</u>
	TOTAL		<u>17</u>

APPENDIX 13Status Differentials Scale

Subjects were presented with the following sketches and asked to indicate the range of facilities operating within their factory. The status differential score was the total of differences between their highest and lowest choice. The lowest choice, in almost all cases, was the number one sketch.

Secretary

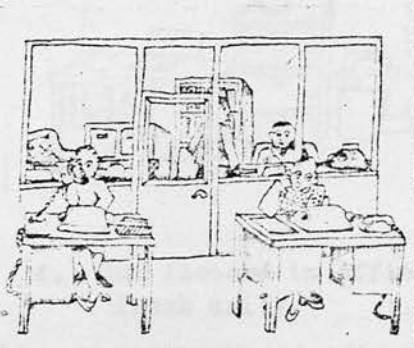
1. Access to typing pool.



2. Own secretary, shares your office.



3. Secretary in separate office.



4. Two secretaries in outside office.

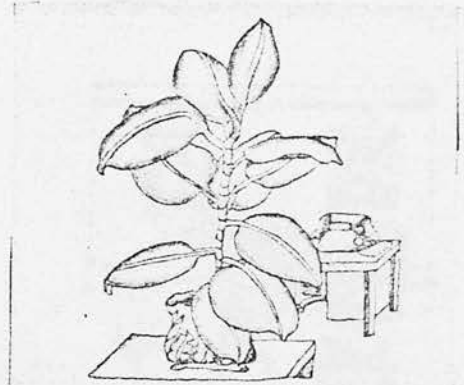
e.g. Managing Director has his own secretary in a separate office (score 3) while lower managers have to use a typing pool (score 1).

$$\text{Status Differential Score} = 3 - 1 = 2$$

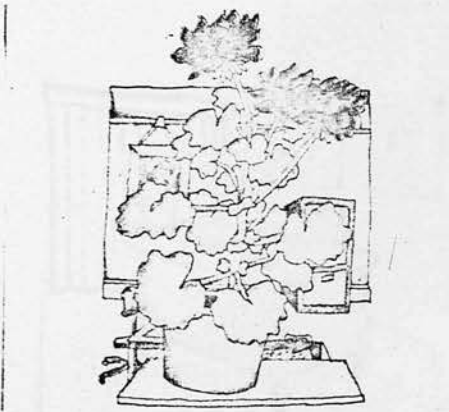
FLOWERS



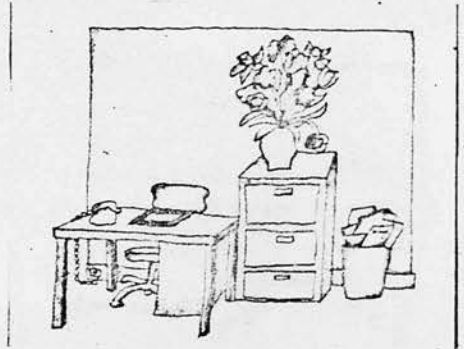
1. Bring your own.



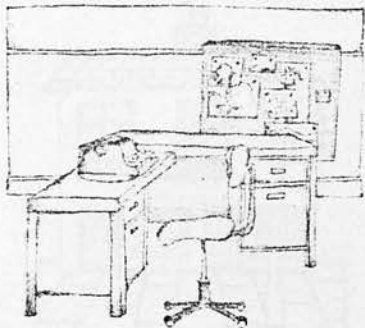
2. Rubber Plant.



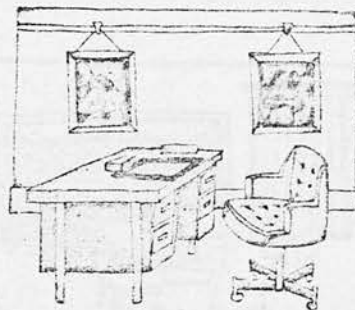
3. Flowering Plant.



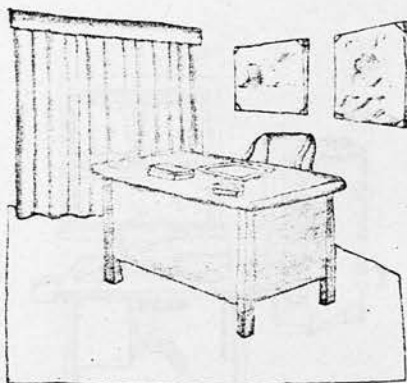
4. Cut flowers in office,
fresh daily.

OFFICE FURNISHING

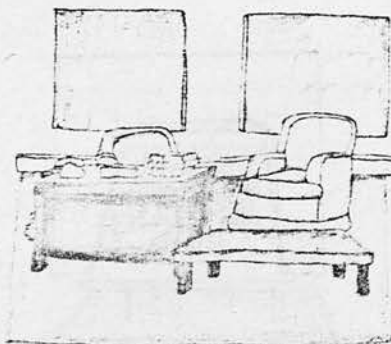
1. Light oak and lino.
Photographs pinned
to notice board.



2. Leather swivel chair
and haircord. Art
Reproductions.

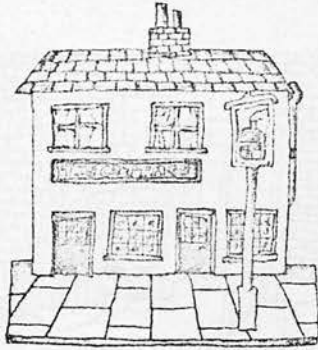


3. Mahogany, leather top
desk, Wilton carpet.
Art Lithographs.

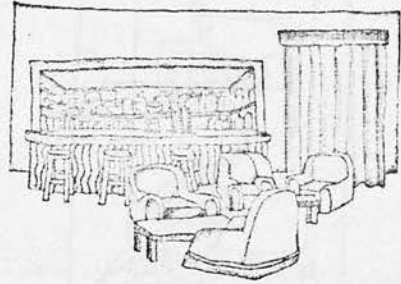


4. Solid walnut, wall to
wall carpet, coffee
table and armchairs,
original paintings.

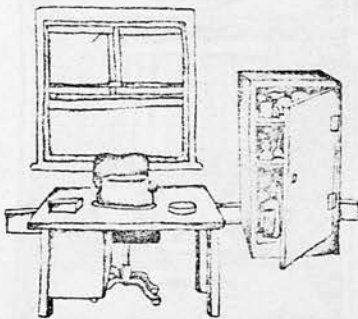
DRINKS



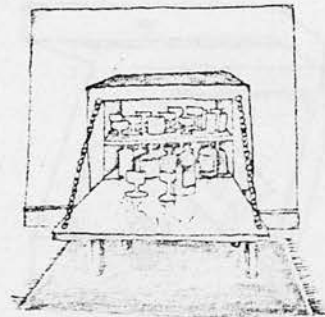
1. Pub across the road.



2. Staff club.

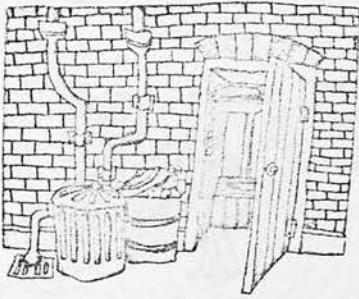


3. Drinks cupboard in office.

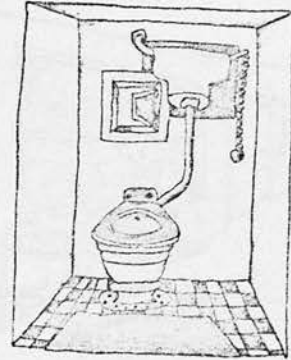


4. Cocktail cabinet.

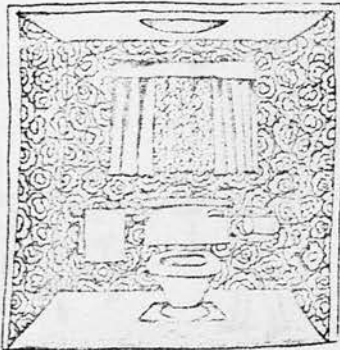
TOILET



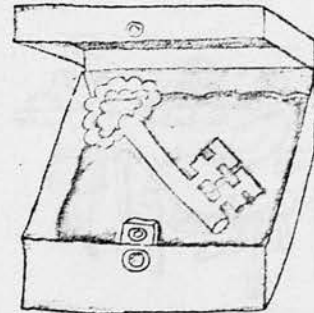
1. Bog in the yard.



2. Staff lavatory.

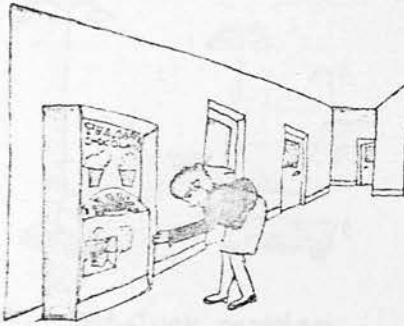


3. Management toilet.

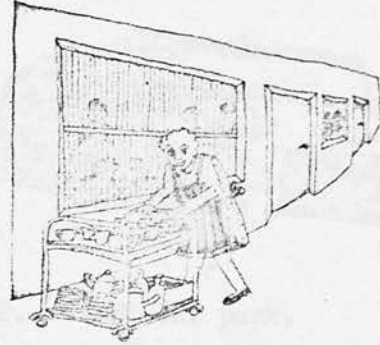


4. Key to top executives toilet.

TEA



1. Vending machine in corridor.



2. Trolley service.

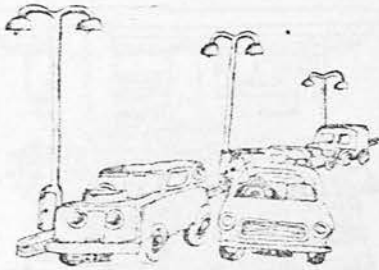


3. Secretary brings coffee in cups.



4. Secretary brings tea in pot with cakes etc.

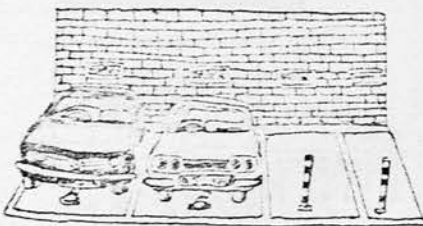
CAR



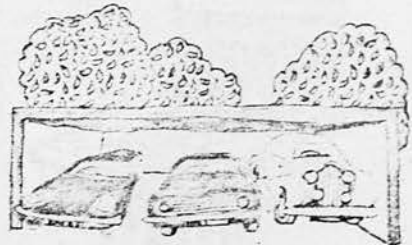
1. Pot-luck parking.



2. Staff car park.

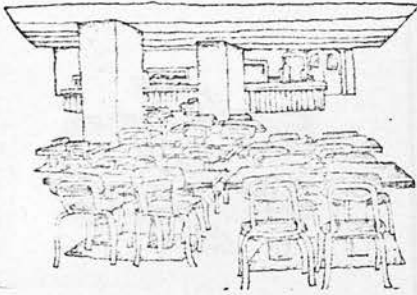


3. Car Park - reserved place.

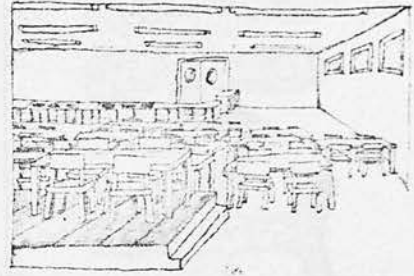


4. Company Car - reserved place.

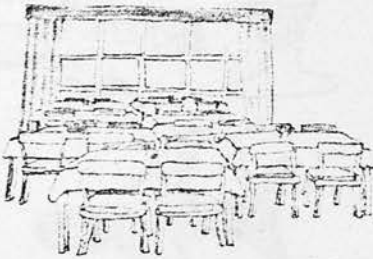
MEALS



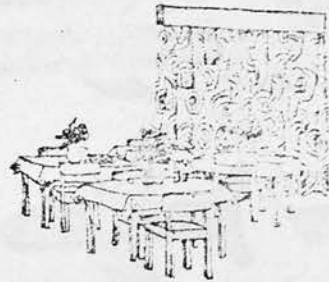
1. Works canteen.



2. Staff canteen.

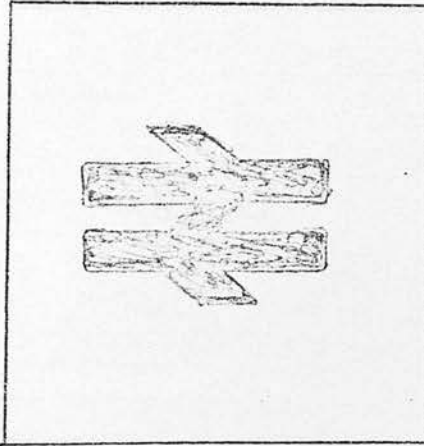


3. Management mess with
waitress service.

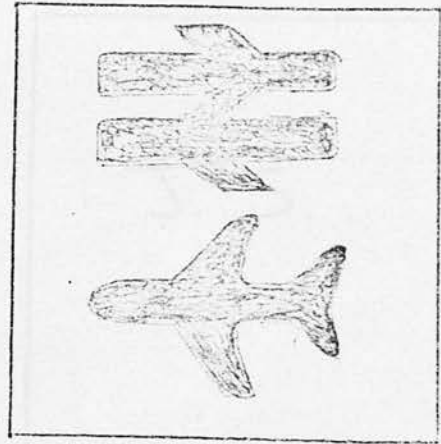


4. Top executives dining
room.

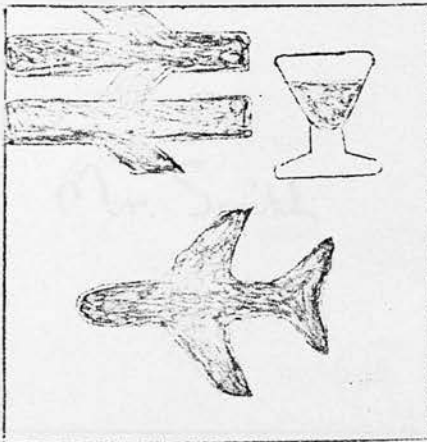
TRAVEL



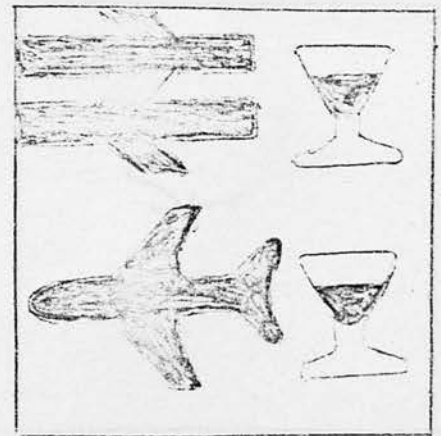
1. 2nd class rail



2. 2nd class rail -
Tourist air.



3. 1st class rail -
Tourist air.



4. 1st class rail and
air.

FORM OF ADDRESS

John

1. Christian Name.

J. S.

2. Initials.

Mr. Smith

3. Surname.

Sir

4. Formal.

APPENDIX 14Cognitive Distance (D)¹

$$D = \sqrt{\sum (\text{scale differences})^2}$$

where \sum = the sum of

e.g.

TEACHER	Scale Difference	(Scale Difference) ²																																																												
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	2	4																																																												
	3	<u>9</u>																																																												
		33																																																												

✓ First Subjects' Replies
 × Second Subjects' Replies

$$D = \sqrt{33}$$

$$= 5.75$$

The Cognitive Distance over the five professions (Appendix 5 & 6, Section G) is taken as the average D score.

1 Osgood et al (1957)

APPENDIX 15Accuracy of Upward Communication (Tau)

$$\text{Tau} = \frac{P - Q}{P + Q} \dots\dots\dots (1)$$

where P = the number of positive inversions
 Q = the number of negative inversions.

In the five problem areas the accuracy of upward communications is taken as the average Tau score where

$$\text{Tau (average)} = \frac{\sum (P - Q)}{\sum (P + Q)} \dots\dots\dots (2)$$

where \sum = the sum of

1 see Appendix 33 for examples

2 the author is indebted to Mr. Fielding of the Statistics Department for the derivation of this formula

APPENDIX 16WORK LIFE MOBILITY RATE

$$\text{Work Life Mobility Rate} = \frac{\text{Original Occupational Level} - \text{Present Occupational Level}}{\text{Age} - 15}$$

e.g.

Present Occupation - Maintenance Superintendent (Occupational Level 3)

Original Occupation - Apprentice Fitter (Occupational Level 5)

Age - 35

$$\begin{aligned}\text{Work Life Mobility Rate} &= \frac{5 - 3}{35 - 15} \\ &= 0.100\end{aligned}$$

INTERGENERATIONAL MOBILITY RATE

$$\text{Intergenerational Mobility Rate} = \frac{\text{Social Background - Present Occupational Level}}{\text{Age - 15}}$$

e.g.

Present Occupation - Maintenance Superintendent (Occupational Level 3)

Social Background (Father's Occupation) - Factory Worker (Occupational Level 7)

Age - 35

$$\begin{aligned} \text{Intergenerational Mobility Rate} &= \frac{7 - 3}{35 - 15} \\ &= 0.200 \end{aligned}$$

APPENDIX 18Need for Promotional Substitute Scales

This scale is derived basically by dividing need by achievement thus:-

$$\text{Need for promotional substitute} = \frac{\text{Desire for Promotion}}{\text{Work Life Mobility Rate}}$$

Examples

1. A subject with a strong desire for promotion (e.g. 8) but who has a low mobility rate (e.g. 0.050)

$$\text{score} = \frac{8}{0.050} = 160$$

2. A subject with a low desire for promotion (e.g. 2) coupled with a low mobility rate (e.g. 0.050)

$$\text{score} = \frac{2}{0.050} = 40$$

APPENDIX 19Managerial Style Scale(from Appendix 5, Section F, Questions 3, 4, 6 and 8)¹Concern for Production

- | | | | |
|----|---|----|---|
| 3. | Work in a position equivalent to your present level, which gives you an unusually great deal of freedom to do the things you would like to do | OR | Work in a higher-level position which has considerable limitations on the freedom given you |
| | <input type="checkbox"/> | | <input type="checkbox"/> |
| 4. | Work in a position equivalent to your present level in which you would have a very liberal operating budget | OR | Work in a higher-level position with a "tight" budget |
| | <input type="checkbox"/> | | <input type="checkbox"/> |

ResponseScore

Accepting both promotional possibilities	9
Accepting one promotional possibility	5
Accepting neither promotional possibilities	1

Concern for People

- | | | | |
|----|--|----|--|
| 6. | Transfer "across" to a position in which you would have a congenial, hard-working group of employees working for you | OR | Promotion to a higher-level position in which you would have a group of temperamental, "problem" employees working for you |
| | <input type="checkbox"/> | | <input type="checkbox"/> |
| 8. | Promotion to a higher-level position in which your new superior has the reputation of being a "holy terror" | OR | Work in a position equivalent to your present level with more limited promotion opportunities, but with a superior you enjoy working for |
| | <input type="checkbox"/> | | <input type="checkbox"/> |

ResponseScore

Rejecting both promotional possibilities	9
Rejecting one promotional possibility	5
Rejecting neither promotional possibilities	1

¹ The managers were choosing between 10 alternative positions by placing a check mark in box beside the chosen alternative.

APPENDIX 22Computer Program Flow Diagram

INPUT

N - No. of Readings

M - No. of Variables

IX (150, (M)) - Data Matrix (N x M)
(If no reading IX (I,J) = 99)

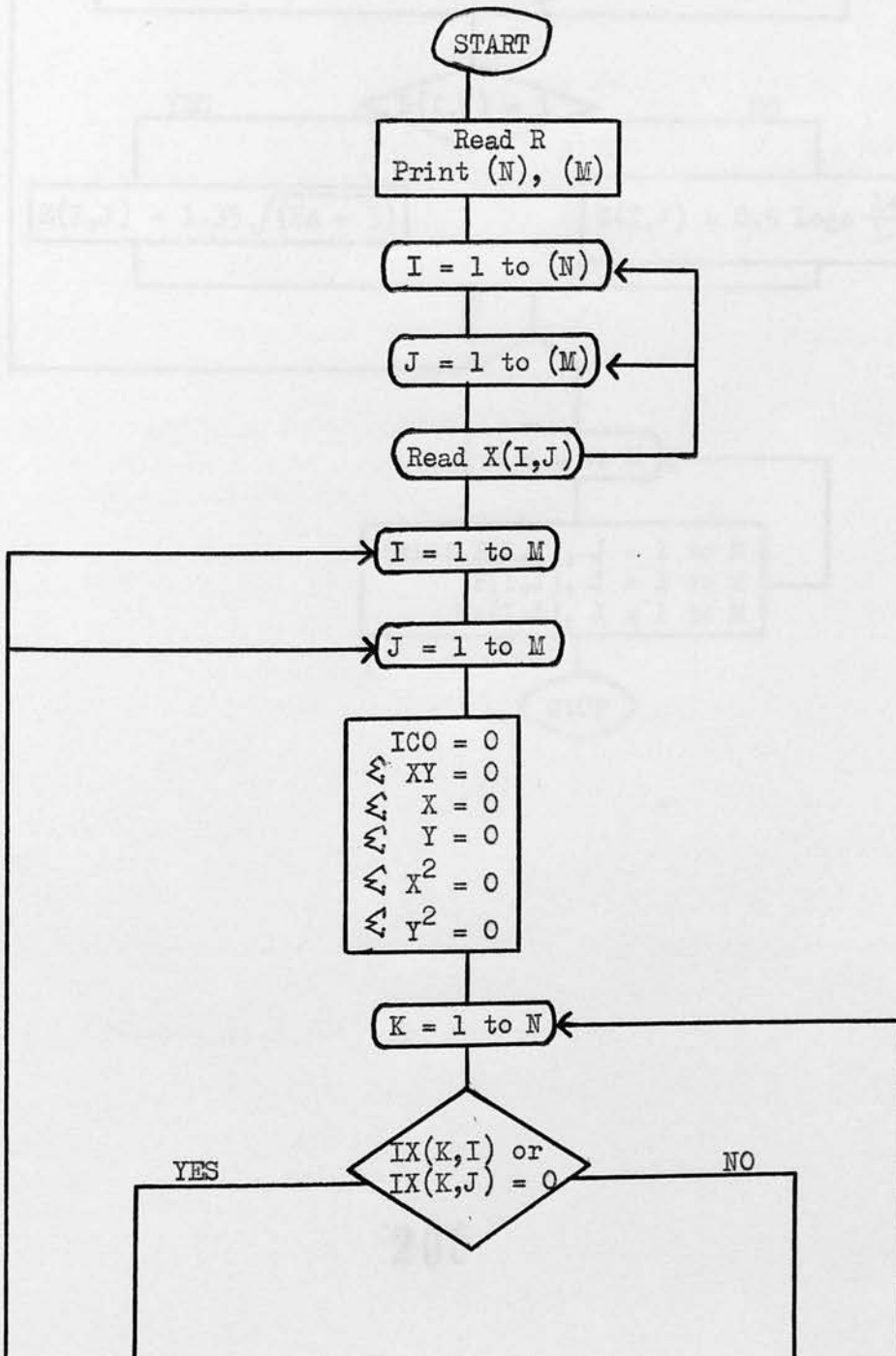
OUTPUT

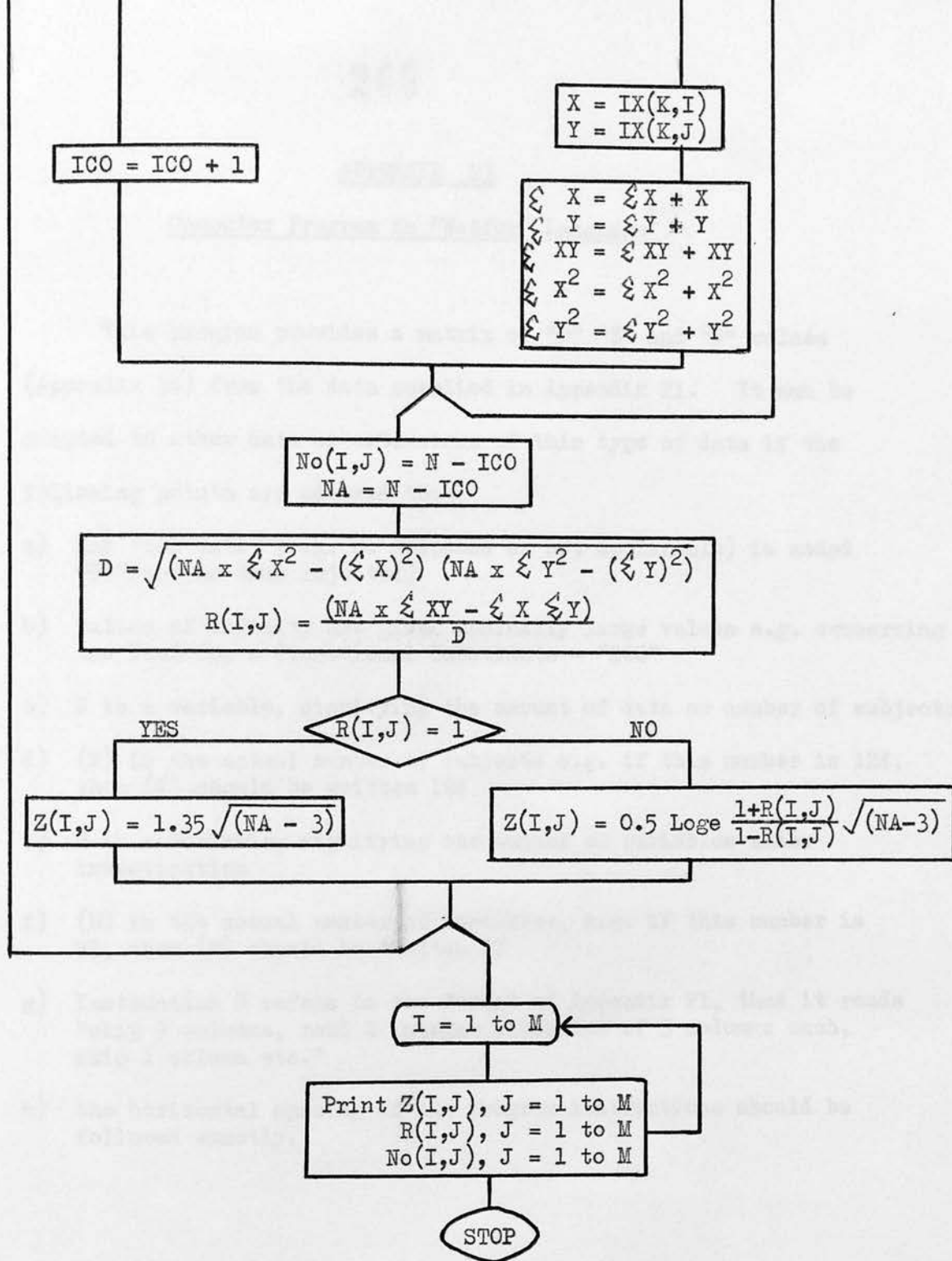
Matrices (M x M - MAX (M) x (M)):-

R((M), (M)) - Correlation Coefficients

Z((M), (M)) - Statistical Test

No((M), (M)) - Number of Readings for R(I,J)





APPENDIX 23Computer Program in "Watfor" Language¹

This program provides a matrix of "r" "Z" and "N" values (Appendix 34) from the data supplied in Appendix 21. It can be adapted to other data or extensions of this type of data if the following points are adhered to:-

- a) any "non data" (e.g. no response or not applicable) is coded "99" and is thus rejected)
- b) values of infinity are given nominally large values e.g. concerning the Need for a Promotional Substitute - "200"
- c) N is a variable, signifying the amount of data or number of subjects
- d) (N) is the actual number of subjects e.g. if this number is 124, then (N) should be written 124
- e) M is a variable, signifying the number of variables under investigation
- f) (M) is the actual number of variables, e.g. if this number is 27, then (M) should be written 27
- g) Instruction 8 refers to the format of Appendix 21, thus it reads "skip 9 columns, read 2 integar variables of 3 columns each, skip 1 column etc."
- h) the horizontal spacing of the program instructions should be followed exactly.

1 Cress et al (1968)

COLUMN

1 23456 78.....

§ COMPI LE

C NAME & CODE

C CORRE LATION

```

INTEG ER IX(150,(M)),NO((M),(M))/(N2)*0./
REAL R((M),(M))/(N2)*0./,Z((M),(M))/(N2)*0./
READ,N,M
WRITE(6,10)N,M
10  FORMAT(' ','N AND M ARE',ZI5)
DO 1 I=1,N
1  READ 8,(IX(I,J),J=1,M)
DO 11 I=1,M
DO 11 J=I,M
ICO=0.
SXY=0.
SX=0.
SY=0.
SX2=0.
SY2=0.
DO 3 K=1,N
IF(IX(K,I).EQ.99.OR,IX(K,J).EQ.99)GO TO 4
X=IX(K,I)
Y=IX(K,J)
SX=SX+X
SY=SY+Y
SXY=SXY+X*Y
SX2=SX2+X**2
SY2=SY2+Y**2
GO TO 3
4  ICO=ICO+1
3  CONTINUE
NO(I,J)=N-ICO
NA=N-ICO
D=((NA*SX2-SX**2)*(NA*SY2-SY**2))**0.5)
R(I,J)=(NA*SXY-SX*SY)/D
IF(R(I,J).EQ.1.)GO TO 11
2  Z(I,J)=0.5*ALOG((1+R(I,J))/(1-R(I,J)))*(FLOAT(NA-3)**0.5)
11 IF(R(I,J).EQ.1.)Z(I,J)=1.35*(FLOAT(NA-3)**0.5)
DO 5 I=1,M
PRINT 6,(Z(I,J),J=1,M)
PRINT 6,(R(I,J),J=1,M)
5  PRINT 9,(NO(I,J),J=1,M)
6  FORMAT('O',20F6.2)
8  FORMAT(9X,2I3,1X,5I2,I3,I4,2I2,5I3,1X,8I2,1X,I3,2I2)
9  FORMAT('O',20I6)
STOP
END
§ DATA
(N) (M)

```

APPENDIX 31

Chi-Squared Test (χ^2)¹

$$\chi^2 = \sum \frac{(F_o - F_e)^2}{F_e} \quad F_e = \frac{\sum F_e \times \sum F_r}{N} \quad v = (C - 1)(R - 1)$$

where \sum = the sum of
 F_o = observed frequency
 F_e = expected frequency
 N = sample size = $\sum F_e + \sum F_r$
 v = degrees of freedom
 C = number of columns
 R = number of rows
 F_e = column frequency
 F_r = row frequency
 p = level of significance

TABLE 31a

Work Life Mobility Rate vs Accuracy of Upward Communication

		Accuracy of Communication			N	Accuracy of Communication		
		Low ≤ 0.12	Medium 0.13 - 0.23	High ≥ 0.24		Low ≤ 0.12	Medium 0.13 - 0.23	High ≥ 0.24
Work Life Mobility Rate	Low < 0.095	13	13	7		10.6	11.8	10.6
	High > 0.095	4	6	10		6.4	7.2	6.4
		Observed Frequencies			53	Expected Frequencies		

$$\chi^2 = 5.13$$

$$v = 2$$

$$p = 0.07$$

1 Maxwell (1964)

2 Kendall (1952, Table VI)

TABLE 31b

Accuracy of Upward Communication vs Desire for Promotion

		Desire for Promotion		N	Desire for Promotion	
		Low 0-3	High 4-10		Low 0-3	High 4-10
Accuracy of Upward Communication	Low < 0.18	11	15		11.8	14.2
	Medium $0.18-0.26$	4	10		6.3	6.7
	High > 0.26	9	4		5.9	7.1
		Observed Frequencies		53	Expected Frequencies	

$$\chi^2 = 4.84$$

$$v = 2$$

$$p = \underline{0.08}$$

TABLE 31c

Accuracy of Upward Communication vs Interpersonal Trust

		Interpersonal Trust		N	Interpersonal Trust	
		Low 3-12	High 13-15		Low 3-12	High 13-15
Accuracy of Upward Communication	Low ≤ 0.14	14	8		13.1	8.9
	Medium $0.15-0.24$	10	3		7.7	5.3
	High ≥ 0.25	7	10		10.2	6.8
		Observed Frequencies		52	Expected Frequencies	

$$\chi^2 = 4.32$$

$$v = 2$$

$$p = \underline{0.10}$$

TABLE 31d

Accuracy of Upward Communication vs Supervisory Level of Subordinate

		Supervisory Level		N	Supervisory Level	
		Low 1	High 2 & 3		Low 1	High 2 & 3
Accuracy of Upward Communication	Low < 0.07	14	1		8.6	6.4
	Medium 0.07-0.24	9	12		12.1	8.9
	High > 0.24	7	9		9.3	6.7
		Observed Frequencies		52	Expected Frequencies	

$$\chi^2 = 11.18$$

$$v = 2$$

$$p < \underline{0.01}$$

TABLE 31e

Accuracy of Upward Communication vs Speed of Response in Completing Questionnaire (Days)
(average of Superior & Subordinate speeds)

		Speed		N	Speed	
		Low ≥ 10	High < 9		Low ≥ 10	High < 9
Accuracy of Upward Communication	Low < 0.14	8	7		4.6 ¹	9.4
	High ≥ 0.14	5	22		8.2	18.8
		Observed Frequencies		42	Expected Frequencies	

$$\chi^2 = 5.62$$

$$v = 1$$

$$p = \underline{0.02}$$

1 1 frequency less than 5 - allowable - Cochran (1954)

TABLE 31f

Interpersonal Trust vs Perceived Influence of
Immediate Superior

		Perceived Influence			N	Perceived Influence		
		Low 3-9	Medium 10-12	High 13-15		Low 3-9	Medium 10-12	High 13-15
Interpersonal Trust	Low 3-11	8	3	10		4.3 ¹	7.3	9.4
	High 12-15	4	17	16		7.7	12.7	16.6
		Observed Frequencies			58	Expected Frequencies		

$$\chi^2 = 9.01$$

$$v = 2$$

$$p = 0.01$$

1 1 frequency less than 5 - allowable - Cochran (1954)

TABLE 3lg

Desire for Promotion vs Supervisory Level of Superior

		Supervisory Level			N	Supervisory Level		
		Low 2	Medium 3	High 4		Low 2	Medium 3	High 4
Desire for Promotion	Low 0-4 High 5-10	27 7	10 7	2 8		21.7 12.3	10.9 6.1	6.4 ₁ 3.6 ₁
		Observed Frequencies			61	Expected Frequencies		

$$\chi^2 = 10.89$$

$$v = 2$$

$$p < \underline{0.01}$$

TABLE 3lh

Desire for Promotion vs Perceived Influence of Immediate Superior

		Perceived Influence			N	Perceived Influence		
		Low 3-9	Medium 10-12	High 13-15		Low 3-9	Medium 10-12	High 13-15
Desire for Promotion	Low 0-4 High 5-10	11 1	15 6	11 15		7.5 4.5 ₁	13.2 7.8	16.3 9.7
		Observed Frequencies			59	Expected Frequencies		

$$\chi^2 = 9.64$$

$$v = 2$$

$$p < \underline{0.01}$$

1 1 frequency less than 5 - allowable - Cochran (1954)

TABLE 31i

Desire for Promotion vs Difference in Age
(Superior's Age - Subordinate's Age)

			Age Difference		N	Age Difference	
			Low < 0	High > 0		Low < 0	High > 0
Desire for Promotion	Low	0-3	17	6		11.9	11.1
	Medium	4	6	5		5.7	5.3
	High	5-10	4	14		9.4	8.6
			Observed Frequency		52	Expected Frequency	

$$\chi^2 = 11.06$$

$$v = 2$$

$$p < \underline{0.01}$$

TABLE 31j

Desire for Promotion vs Difference in Social Background
(Superior - Subordinate Backgrounds)

			Background Difference			N	Background Difference		
			Low -1	Medium 0-1	High 2		Low -1	Medium 0-1	High 2
Desire for Promotion	Low	0-3	7	11	3		6.8	8.2	5.0
	High	4-10	8	7	10		8.2	9.8	7.0
			Observed Frequencies			46	Expected Frequencies		

$$\chi^2 = 4.85$$

$$v = 2$$

$$p = \underline{0.08}$$

TABLE 31k

Need for Promotional Substitute¹ vs Communication Frequency
with Immediate Superior²

		Communication Frequency			N	Communication Frequency		
		Low 0-9	Medium 10-15	High > 16		Low 0-9	Medium 10-15	High > 16
Need for Promotional Substitute	Low 0-50	9	16	10		5.9	19.0	10.1
	High > 50	1	16	7		4.1 ³	13.0	6.9
		Observed Frequencies			59	Expected Frequencies		

$$\chi^2 = 5.14$$

$$v = 2$$

$$p = 0.07$$

TABLE 31 l

Need for Promotional Substitute¹ vs Communication Frequency
with Both Superiors²

		Communication Frequency			N	Communication Frequency		
		Low 0-15	Medium 16-22	High > 23		Low 0-15	Medium 16-22	High > 23
Need for Promotional Substitute	Low 0-50	12	8	15		8.9	11.3	14.8
	High > 50	3	11	10		6.1	7.7	10.2
		Observed Frequencies			59	Expected Frequencies		

$$\chi^2 = 5.04$$

$$v = 2$$

$$p = 0.08$$

1 Appendix 18

2 Appendix 5, Section H

3 1 frequency less than 5 - allowable - Cochran (1954)

TABLE 31m

Work Life Mobility Rate¹ vs Educational Level²

		Educational Level			N	Educational Level		
		Low 12	Medium 13-14	High 15		Low 12	Medium 13-14	High 15
Work Life Mobility Rate	Low ≤ 0.06	17	2	3		8.8	5.2	8.0
	Medium $0.061-0.119$	4	9	15		11.3	6.5	10.2
	High ≥ 0.12	10	7	10		10.9	6.3	9.8
Σ Fe		31	18	28	77	31.0	18.0	28.0

$$\chi^2 = 20.83$$

$$v = 4$$

$$p < 0.001$$

1 Appendix 16

2 Appendix 31

TABLE 31n

Social Background vs Educational Level

		Educational Level		N	Educational Level	
		Low 9-13	High 14-20		Low 9-13	High 14-20
Social Background	Low 7-5	28	11		23.3	15.7
	Medium 4-3	13	8		12.5	8.5
	High 2-1	8	14		13.2	8.8
		Observed Frequencies		82	Expected Frequencies	

$$\chi^2 = 7.53$$

$$v = 2$$

$$p = 0.02$$

TABLE 31o

Social Background vs Present Occupational Level¹

		Present Occupational Level		N	Present Occupational Level	
		Low 7-4	High 3-1		Low 7-4	High 3-1
Social Background	Low 7-6	11	5		5.3	10.7
	Medium 5-4	14	29		14.2	28.8
	High 3-1	2	21		7.5	15.5
		Observed Frequencies		82	Expected Frequencies	

$$\chi^2 = 15.15$$

$$v = 2$$

$$p < 0.001$$

TABLE 31p

Social Background vs Original Occupational Level¹

		Original Occupational Level		N	Original Occupational Level	
		Low 7-5	High 4-1		Low 7-5	High 4-1
Social Background	Low 7-4	35	4		31.9	7.1
	High 3-1	32	11		35.1	7.9
		Observed Frequencies		82	Expected Frequencies	

$$\chi^2 = 3.15$$

$$v = 1$$

$$p = \underline{0.07}$$

¹ Appendix 21

TABLE 31a

Age vs Educational Level

		Educational Level			N	Educational Level		
		Low 12	Medium 13-15	High 16		Low 12	Medium 13-15	High 16
Age	Low 26-31	8	11	8		11.9	9.8	5.3
	Medium 32-42	13	12	6		13.7	11.3	6.0 ¹
	High ≥ 43	13	5	1		8.4	6.9	3.7 ¹
		Observed Frequencies			78	Expected Frequencies		

$$\chi^2 = 7.89$$

$$v = 4$$

$$p = 0.09$$

1 1 frequency less than 5 - allowable - Cochran (1954)

TABLE 31r

Educational Level vs Present Occupational Level

		Present Level		N	Present Level	
		Low 5-4	High 3-1		Low 5-4	High 3-1
Educa- tional Level	Low 9-11	16	10		9.3	16.7
	Medium 12-16	15	33		17.3	30.7
	High 17-20	1	14		5.4	9.6
		Observed Frequencies		89	Expected Frequencies	

$$\chi^2 = 13.59$$

$$v = 2$$

$$p = \underline{0.001}$$

TABLE 31s

Educational Level vs Original Occupational Level

		Original Level		N	Original Level	
		Low 7-5	High 4-1		Low 7-5	High 4-1
Educational Level	Low 9-13	53	21		44.1	29.9
	High 14-20	0	15		8.9	6.1
		Observed Frequencies		89	Expected Frequencies	

$$\chi^2 = 47.78$$

$$v = 1$$

$$p < \underline{0.001}$$

TABLE 31t

Original Occupational Level vs Present Occupational Level

		Present Level		N	Present Level	
		Low 7-4	High 3-1		Low 7-4	High 3-1
Original Level	Low 7-5 High 4-1	31 0	43 15		25.8 5.2	48.2 9.8
		Observed Frequencies		89	Expected Frequencies	

$$\chi^2 = 30.12$$

$$v = 1$$

$$p < 0.001$$

Question	Answer	N	Observed	Expected	Residual
Who is in the best position to know your problems?	My Boss	25	2.92	0.24	-
	My Associates	15	1.39	0.11	0.28
	Others	2	0.09	0.05	0.04

$$\chi^2 = \frac{0.11 - 0.02}{0.13} \sqrt{17} = 1.31$$

$$v = 2 - 1 = 1$$

$$p < 0.05$$

1. Roel (1965, Ch. 6)

2. Accuracy of Visual Communications

3. Roel (1965, Table 7)

APPENDIX 32Students "t" Distribution¹

$$t = \frac{\bar{x} - \mu}{s} \sqrt{N}$$

$$v = N - 1$$

where \bar{x} = sample mean

μ = population mean

s = standard deviation of sample

N = sample size

v = degrees of freedom

p = level of significance

ExampleTABLE 32a

Subordinate's Predictions of Accurate Communications
(Subordinate Questionnaire, Section C - Appendix 5)

Question	Answer	N	Total Tau ²	Mean	Standard Deviation
Who is in the best position to know your problems?	My Boss	35	6.95	0.20	-
	My Associates	15	1.87	0.11	0.13
	Others	2			

$$t = \frac{0.11 - 0.20}{0.13} \sqrt{17} = 2.84$$

$$v = 17 - 1 = 16$$

$$p = 0.02^3$$

1 Hoel (1968, Ch. 6)

2 Accuracy of Upward Communications

3 Hoel (1968, Table V)

TABLE 32b

Rank Ordering of Problems - Consistency¹

	N	Total Tau ²	Mean	Standard Deviation
Basic Data	53	9.01	0.17	
Subordinate Sub Sample	5	2.91	0.58	
Superior Sub Sample	8	3.17	0.40	
Combined Sub Sample	13	6.08	0.47	0.19

$$t = 5.69$$

$$v = 12$$

$$p < 0.001$$

TABLE 32c

Replies to the question, "Has the Superior previously
held the Subordinate's type of job?"
(Appendix 5 and 6, Section A, Question 7)

		N	Total Tau ²	Mean	Standard Deviation
Superior-Subordinate Replies	No - Yes	3	0.79	0.26) 0.13
	No - No	11	2.46	0.22	
	Yes - Yes	29	5.26	0.18	0.13
	Yes - No	10	0.50	0.05	
Total		53	9.01	0.17	

Yes - No replies

$$t = 23.10$$

$$v = 9$$

$$p < 0.001$$

No - Yes and No - No replies

$$t = 2.30$$

$$v = 13$$

$$p = 0.04$$

1 Appendix 7

2 Accuracy of Upward Communications

TABLE 32d

Comparison of Subjects Communication Accuracy with that
of a Stereotype Population

	N	Total Tau ¹	Mean	Standard Deviation
Research Sample	53	9.01	0.17	0.18
Stereotype Population	396	35.62	0.09	-

$$t = 3.2$$

$$v = 52$$

$$p < 0.001$$

1 Accuracy of Upward Communications

APPENDIX 33

Kendall's Rank Correlation (τ)¹

$$\tau = \frac{P - Q}{P + Q} = \frac{S}{P + Q}$$

where P = the number of positive inversions

Q = the number of negative inversions

p = level of significance

N = sample size

M = number of ranks

S = actual score

ExampleTABLE 33a

Managerial Style² vs Work Life Mobility Rate³

Managerial Style	9,5	9,1	5,9	5,5	5,1	1,9	1,5	1,1
Average Work Life								
Mobility Rate	0.104	0.094	0.090	0.088	0.093	0.075	0.098	0.072
N	2	8	6	10	9	10	8	8
Ranking of								
Managerial Grid ⁴	1	2	3	4	5	6	7	8
Ranking by Work Life								
Mobility Rate	1	3	5	6	4	7	2	8
P	7	5	3	2	2	1	1	-
Q	-	0	0	0	2	0	5	0

$$\tau = \frac{21 - 7}{21 + 7} = 0.50$$

$$M = 8$$

$$p = 0.06^5 \text{ (one tailed test)}$$

1 Kendall (1948, Ch. 1)

2 Appendix 19

3 Appendix 16

4 Blake & Mouton (1964)

5 Kendall (1948, Appendix Table 1)

TABLE 33b

Managerial Style¹ vs Accuracy of Upward Communications

Managerial Style	9,5	9,1	5,9	5,5	5,1	1,9	1,5	1,1
Average Communications Score	0.19	0.21	0.19	0.10	0.20	0.23	0.08	0.07
N	2	7	5	9	7	10	7	6
Ranking on Managerial Grid ²	1	2	3	4	5	6	7	8
Ranking by Communications Score	4	2	5	6	3	1	7	8

$$\tau = 0.36$$

$$M = 8$$

$$p = \underline{0.14} \text{ (one tailed test)}$$

1 Appendix 19

2 Blake & Mouton (1964)

TABLE 33c

Status Differentials¹ vs Desire for Promotion²
(Analysed by firm)

Firm	A	B	C	D	E	F
Secretary	2	1	2	2	1	2
Flowers	2	0	1	3	0	0
Furnishings	3	0	1	3	2	1
Drinks	3	0	1	3	3	2
Toilets	1	1	3	3	1	1
Tea Break	3	0	2	3	2	2
Car Park	3	2	3	4	3	2
Meals	3	0	3	3	1	2
Travel	3	3	3	3	2	3
Form of Address	1	0	0	2	2	1
TOTAL	24	7	19	29	17	16
Average Desire for Promotion	4.8	3.2	3.7	5.0	4.2	2.4
Status Differentials Ranked	2	6	3	1	4	5
Desire for Promotion Ranked	2	5	4	1	3	6

$$\tau = 0.73$$

$$M = 6$$

$$p = \underline{0.03} \text{ (one tailed test)}$$

1 Appendix 13

2 Appendix 5, Section F

APPENDIX 34

Pearson's Product-Moment Correlation (r)¹

$$r = \frac{N \sum xy - \sum x \sum y}{\sqrt{(N \sum x^2 - (\sum x)^2)(N \sum y^2 - (\sum y)^2)}}$$

$$\sigma_w = \frac{1}{\sqrt{N - 3}}$$

$$z = \frac{w}{\sigma_w}$$

where N = sample size

x, y = variables

\sum = the sum of

σ_w = standard deviation of the equivalent distribution

w = correlation coefficient of the equivalent distribution

z = standard deviation on the normal curve

p = level of significance

I = Inconclusive

ExampleTABLE 34a

Cognitive Distance² vs Interpersonal Trust³
(between Superior-Subordinate pairs)

Subjects	Cognitive Distance x	Interpersonal Trust y	xy	x ²	y ²
S1	2.90	12	34.80	8.41	144
S2	4.88	13	63.44	23.81	169
S3	3.64	14	50.96	13.25	196
S4	3.94	13	51.22	15.52	169
S5	3.84	12	46.08	14.75	144
S6	3.70	14	51.80	13.69	196
S7	3.82	10	38.20	14.59	100
S8	3.78	10	37.20	14.29	100

1 Hoel (1968, Ch. 8)

2 see Appendix 14

3 see Appendix 5, Section E

TABLE 34a (Contd.)

Subjects	Cognitive Distance x	Interpersonal Trust y	xy	x ²	y ²
S9	2.84	13	36.92	8.07	169
S10	3.48	12	41.76	12.11	144
S11	4.52	13	58.76	20.43	169
S12	3.68	7	25.76	13.54	49
S13	4.26	12	51.12	18.15	144
S14	4.30	12	51.60	18.49	144
S15	8.10	8	64.80	65.61	64
S16	2.66	13	34.58	7.08	169
S17	5.12	13	66.56	26.21	169
S18	6.60	10	66.00	43.56	100
Σ	76.06	211	872.16	351.56	2542

$$r = \frac{18 \times 872.16 - 76.06 \times 211}{\sqrt{(18 \times 351 - (76.06)^2)(18 \times 2542 - (211)^2)}} = -0.43$$

$$w = 0.460^1$$

$$z = \frac{1}{\sqrt{18 - 3}} = 0.258$$

$$z = \frac{0.460}{0.258} = 1.78$$

$$p = 0.50 - 0.46^2$$

$$= 0.04 \text{ (one tailed test)}$$

1 Hoel (1968, Table VI)

2 Hoel (1968, Table IV)

TABLE 34b

Intercorrelations Among the Three Interpersonal Trust
Items of Subordinate Questionnaire Section D (Appendix 5)

	Question 2			Question 3		
	r	N	p	r	N	p
Question 1	0.564	61	<0.001	0.784	61	<0.001
Question 2	-	-	-	0.484	61	<0.001

TABLE 34c

Intercorrelations Among the Three Perceived Influence
Items of Subordinate Questionnaire Section E (Appendix 5)

	Question 2			Question 3		
	r	N	p	r	N	p
Question 1	0.812	61	<0.001	0.336	61	<0.01
Question 2	-	-	-	0.394	61	<0.001

TABLE 34d

Intercorrelations with Educational Level (Appendix 12)

	r	N	p
Original Occupational Level	-0.56	89	< .001
Present Occupational Level	-0.34	89	< .001
Work Life Mobility Rate	0.24	77	< .01
Age	-0.31	78	< .001
Social Background	-0.30	82	< .001

TABLE 34e

Intercorrelations with Original Occupational Level

	r	N	p
Present Occupational Level	0.23	89	< .01
Age	0.15	78	0.06
Social Background	0.32	82	< .001

TABLE 34f

Intercorrelations with Social Background (Appendix 11)

	r	N	p
Present Occupational Level	0.32	82	< .001
Work Life Mobility Rate	-0.11	82	I
Age	-0.07	82	I

TABLE 34g

Intercorrelations with Work Life Mobility Rate
(Appendix 16)

	r	N	p
Desire for Promotion	0.08	61	I
Status Symbols	-0.02	82	>.90
Speed in Communicating	-0.08	82	I
Total Communicating Frequency	0.03	59	.90

TABLE 34h

Intercorrelations with Accuracy of Upward Communication

	r	N	p
Frames of Reference	0.27	24	<u>0.10</u>
Cognitive Distance	-0.12	18	I
Difference in Age	0.04	53	>.90
Difference in Social Background	-0.12	45	I
Difference in Educational Level	-0.05	53	I
Status Symbols	0.06	53	N.S.
Educational Level	0.20	53	<u>0.03</u>
Perceived Influence	-0.39	52	<u><.01</u>
Frequency of Communication	-0.18	52	N.S.

TABLE 34i

Intercorrelations with Interpersonal Trust
(Appendix 5, Section D)

	r	N	p
Status Symbols	0.02	57	>.90
Cognitive Distance	-0.43	18	<u>0.04</u>
Frames of Reference	0.15	24	I
Speed in Communicating	-0.46	59	<u><.001</u>
Total Communicating Frequency	0.02	57	>.90

TABLE 34j

Intercorrelations with Desire for Promotion
(Appendix 5, Section F)

	r	N	p
Educational Level	0.03	54	> 0.90
Difference in Educational Level	0.02	61	> 0.90
Length of Relationship	0.17	60	<u>0.09</u>

TABLE 34k

Intercorrelations with Need for Promotional Substitute
(Appendix 18)

	r	N	p
Perceived Influence	0.16	58	I
Status Symbols	0.19	58	<u>0.08</u>
Difference in Age	-0.01	53	> 0.90
" " Social Background	0.10	45	I
" " Educational Level	0.20	53	<u>0.07</u>

TABLE 34 l

Intercorrelations with Perceived Influence
(Appendix 5, Section E)

	r	N	p
Total Communicating Frequency	0.00	58	> 0.90
Difference in Communicating Frequency	0.25	59	<u>0.03</u>
Supervisory Level	0.36	60	< <u>0.01</u>

TABLE 34m

Intercorrelations with Cognitive Distance
(Appendix 14)

	r	N	p
Frames of Reference	-0.72	7	0.03
Difference in Age	0.37	18	0.06
" " Social Background	-0.38	18	0.06
" " Educational Level	-0.08	18	I

TABLE 34n

Intercorrelations with Frames of Reference

	r	N	p
Difference in Age	0.10	24	I
" " Social Background	0.27	23	I
" " Educational Level	0.06	24	> 0.90

TABLE 34o

Intercorrelation with Supervisory Level of Subordinate

	r	N	p
Managerial Style	0.30	61	< 0.01

APPENDIX 35Kendall's Coefficient of Concordance (W)¹

$$W = \frac{12S}{N^2(M^3 - M)}$$

$$\mu = \frac{1}{2}N(M + 1)$$

$$S = \sum (\mu - Fw)^2$$

$$Fw = Fo \times R$$

$$Z = \frac{1}{2} \log_e \frac{(M - 1)W}{1 - W}$$

$$v_1 = M - 1 - \frac{2}{N}$$

$$v_2 = (N - 1)v_1$$

where S = sum of squares of deviations of rankings from the mean ranking

N = Sample size

M = number of problems ranked

μ = mean weighted ranking

v_1, v_2 = degrees of freedom

Z = standard deviation on the normal curve

p = level of significance

Fw = Weighted Frequencies

Fo = Observed Frequencies

R = Ranking

\sum = the sum of

Example (next page)

1 Kendall (1948, Ch. 6)

TABLE 35a

Coefficient of Concordance (W) in the Problem Area of
Co-ordination and Communication
(Appendix 5, Section C, Subordinate Replies)

Observed Frequencies (Fo)							Ranking (R)	Weighted Frequencies (Fw)						
Problem								Problem						
1	2	3	4	5	6	7		1	2	3	4	5	6	7
15	2	5	14	11	7	5	1	15	2	5	14	11	7	5
15	4	9	13	10	5	4	2	30	8	18	26	20	10	8
7	9	8	17	10	5	3	3	21	27	24	51	30	15	9
9	17	9	4	8	9	3	4	36	68	36	16	32	36	12
3	14	8	6	10	7	11	5	15	70	40	30	50	35	55
5	7	9	3	7	17	11	6	30	43	54	18	43	102	66
5	6	11	2	3	9	22	7	35	43	77	14	21	63	154
N = 59							Σ	182	261	254	169	207	268	309

$$\mu = \frac{1}{2}59(7 + 1) = 236$$

$$S = (236 - 182)^2 + (236 - 261)^2 + (236 - 254)^2 + (236 - 169)^2 + (236 - 207)^2 + (236 - 268)^2 + (236 - 309)^2$$

$$= 15548$$

$$W = \frac{12 \times 15548}{59^2 + (7^3 - 7)} = 0.160$$

$$v_1 = 7 - 1 - \frac{2}{59} = 6$$

$$v_2 = (59 - 1)6 = 346$$

$$p < 0.001^1$$

1 Fisher (1950, Table VI)

TABLE 35b

Coefficient of Concordance (W) in the Problem Area of
Co-ordination and Communication
(Appendix 6, Section C, Superior Replies)

Observed Frequencies							Ranking	Weighted Frequencies						
Problem								Problem						
1	2	3	4	5	6	7		1	2	3	4	5	6	7
7	4	5	25	6	6	1	1	7	4	5	25	6	6	1
14	9	7	8	9	4	3	2	28	18	14	16	18	8	6
6	9	9	7	14	7	2	3	18	27	27	21	42	21	6
8	9	8	7	8	12	2	4	32	36	32	28	32	48	8
8	5	12	2	9	9	9	5	40	25	60	10	45	45	45
6	12	8	3	3	11	11	6	36	72	48	18	18	66	66
5	6	5	2	5	5	26	7	35	42	35	14	35	35	182
N = 54								196	224	221	132	196	229	314

$$W = 0.271$$

$$p < 0.001$$

TABLE 35c

Coefficient of Concordance (W) in the Problem Area of
Budget and Cost
(Appendix 5, Section C, Subordinate Replies)

Observed Frequencies					Ranking	Weighted Frequencies				
Problem						Problem				
1	2	3	4	5		1	2	3	4	5
6	17	4	11	18	1	6	17	4	11	18
18	13	7	11	11	2	36	26	14	22	22
18	16	6	9	7	3	54	48	18	27	21
9	10	15	13	10	4	36	40	60	52	40
6	1	25	13	11	5	30	5	125	65	55
N = 57						162	136	221	177	156

$$W = 0.125$$

$$p < \underline{0.001}$$

TABLE 35d

Coefficient of Concordance (W) in the Problem Area of
Budget and Cost
(Appendix 6, Section C, Superior Replies)

Observed Frequencies					Ranking	Weighted Frequencies				
Problem						Problem				
1	2	3	4	5		1	2	3	4	5
13	15	4	11	10	1	13	15	4	11	10
9	11	5	14	13	2	18	22	10	28	26
12	8	13	7	12	3	36	24	39	21	36
11	14	3	17	6	4	44	56	12	68	24
7	4	27	3	11	5	35	20	135	15	55
N = 52						149	137	200	143	151

$$W = 0.094$$

$$p < \underline{0.001}$$

TABLE 35e

Coefficient of Concordance (W) in the Problem Area
 "Technical"
 (Appendix 5, Section C, Subordinate Replies)

Observed Frequencies					Ranking	Weighted Frequencies				
Problem						Problem				
1	2	3	4	5		1	2	3	4	5
3	20	8	7	19	1	3	20	8	7	19
13	11	10	9	16	2	26	22	20	18	32
20	7	12	9	9	3	60	21	36	27	27
10	13	16	11	5	4	40	52	64	44	20
11	6	11	21	8	5	55	30	55	105	40
N = 58						184	145	183	201	138

$$W = 0.091$$

$$p < \underline{0.001}$$

TABLE 35f

Coefficient of Concordance (W) in the Problem Area
 "Technical"
 (Appendix 6, Section C, Superior Replies)

Observed Frequencies					Ranking	Weighted Frequencies				
Problem						Problem				
1	2	3	4	5		1	2	3	4	5
9	14	8	1	20	1	9	14	8	1	20
10	8	12	11	12	2	20	16	24	22	24
10	14	5	12	10	3	30	42	15	36	30
12	7	13	16	4	4	48	28	52	64	16
11	9	14	12	6	5	55	45	70	60	30
N = 52						162	145	169	183	120

$$W = 0.087$$

$$p < \underline{0.001}$$

TABLE 35g

Coefficient of Concordance (W) in the Problem Area of
Pressures and Deadlines
(Appendix 5, Section C, Subordinate Replies)

Observed Frequencies					Ranking	Weighted Frequencies				
Problem						Problem				
1	2	3	4	5		1	2	3	4	5
25	5	12	12	6	1	25	5	12	12	6
16	8	13	16	7	2	32	16	26	32	14
10	10	12	16	12	3	30	30	36	42	36
6	15	15	9	15	4	24	60	60	36	60
3	22	8	7	20	5	15	110	40	35	100
N = 60						126	221	174	163	216

$$W = 0.173$$

$$p < 0.001$$

TABLE 35h

Coefficient of Concordance (W) in the Problem Area of
Pressures and Deadlines
(Appendix 6, Section C, Superior Replies)

Observed Frequencies					Ranking	Weighted Frequencies				
Problem						Problem				
1	2	3	4	5		1	2	3	4	5
23	6	13	9	3	1	23	6	13	9	3
12	7	8	19	8	2	24	14	16	38	16
8	10	15	11	10	3	24	30	45	33	30
8	11	11	7	17	4	32	44	44	28	68
3	20	7	8	16	5	15	100	35	40	80
N = 54						118	194	153	148	197

$$W = 0.154$$

$$p < 0.001$$

TABLE 35i

Coefficient of Concordance (W) in the Problem Area of
Administration and Supervision
(Appendix 5, Section C, Subordinate Replies)

Observed Frequencies							Ranking	Weighted Frequencies						
Problem								Problem						
1	2	3	4	5	6	7		1	2	3	4	5	6	7
7	6	8	8	3	16	10	1	7	6	8	8	3	16	10
9	20	0	10	3	8	8	2	18	40	0	20	6	16	16
10	8	4	14	5	8	9	3	30	24	12	42	15	24	27
11	12	2	8	8	9	8	4	44	48	8	32	32	36	32
8	7	2	11	12	6	12	5	40	35	10	55	60	30	60
9	5	6	7	14	10	7	6	54	30	36	43	84	60	43
4	0	36	0	13	1	4	7	28	0	252	0	91	7	28
N = 58								221	183	326	200	291	189	216

$$W = 0.185$$

$$p < 0.001$$

TABLE 35j

Coefficient of Concordance (W) in the Problem Area of
Administration and Supervision
(Appendix 6, Section C, Superior Replies)

Observed Frequencies							Ranking	Weighted Frequencies						
Problem								Problem						
1	2	3	4	5	6	7		1	2	3	4	5	6	7
8	12	1	6	5	7	15	1	8	12	1	6	5	7	15
12	8	1	12	7	8	6	2	24	16	2	24	14	16	12
9	8	5	10	4	8	10	3	27	24	15	30	12	24	30
8	6	1	15	12	7	5	4	32	24	4	60	48	28	20
11	9	4	5	16	9	6	5	55	45	20	25	80	45	30
5	7	7	5	11	11	8	6	30	43	43	30	66	66	48
1	4	35	1	5	4	4	7	7	28	245	7	35	28	28
N = 54								183	192	330	182	260	214	183

$$W = 0.186$$

$$p < 0.001$$

TABLE 35k

Coefficients of Concordance (W) Among Subordinates'
Rank Orders of the Difficulty of Their Problems in
the Five Problem Areas¹.

Problem Area	N	W	P
Co-ordination and Communication	59	0.160	<0.001
Budget and Cost	57	0.125	<0.001
Technical	58	0.091	<0.001
Pressures and Deadlines	60	0.173	<0.001
Administration and Supervision	58	0.185	<0.001

N.B. In some instances, the subordinate was unable to rank-order problems in all problem areas, hence the total N varies.

TABLE 35l

Coefficients of Concordance (W) Among Superiors'
Rank Orders of the Difficulty of Their Subordinates'
Problems in the Five Problem Areas².

Problem Area	N	W	P
Co-ordination and Communication	54	0.271	<0.001
Budget and Cost	52	0.094	<0.001
Technical	52	0.087	<0.001
Pressures and Deadlines	54	0.154	<0.001
Administration and Supervision	54	0.186	<0.001

N.B. In some instances, the superior was unable to rank-order problems in all problem areas, hence the total N varies.

1 Appendix 5, Section C

2 Appendix 6, Section C

APPENDIX 36Analysis of Organisational Variation

$$\text{Ratio} = \frac{\text{Organisation Variation}}{\text{Population Variation}} = \frac{S^2 (\text{mean of companies})^1}{\sigma^2 (\text{all subjects})}$$

where σ = standard deviation of population

μ = mean of population

N = sample size of population

S = standard deviation of \bar{x}

\bar{x} = mean of each company

n = sample size of company

ExampleTABLE 36a

Work Life Mobility Rate

Company	n	\bar{x}	s	N	μ	σ
LIFE MININT	6	0.087	0.010	81	0.092	0.042
	18	0.107				
	15	0.081				
	18	0.097				
	4	0.082				
	9	0.092				
	11	0.079				

$$\text{Ratio} = \frac{S^2}{\sigma^2} = \frac{0.010}{0.042} = 24\%$$

1 Haire et al, 1966, p 8.

TABLE 36b

Accuracy of Upward Communications

n	\bar{x}	S	N	μ	σ
4	0.32	0.13	53	0.17	0.18
10	0.22				
11	0.28				
13	0.14				
2	0.21				
6	0.06				
7	0.02				

$$R = 72\%$$

TABLE 36c

Interpersonal Trust

n	\bar{x}	S	N	μ	σ
4	11.8	1.1	52	11.6	2.3
10	13.0				
10	10.3				
13	12.6				
2	11.5				
6	10.7				
7	10.4				

$$R = 48\%$$

TABLE 36d

Perceived Influence

n	\bar{x}	S	N	μ	σ
6	11.0	0.6	59	11.4	2.5
10	12.1				
12	11.3				
13	11.9				
8	11.1				
10	10.5				

$$R = 24\%$$

TABLE 36e

Desire for Promotion

n	\bar{x}	S	N	μ	σ
4	4.8	1.2	53	4.0	2.2
10	3.2				
11	3.7				
13	5.0				
2	6.0				
6	4.2				
7	2.4				

$$R = 55\%$$

TABLE 36f

Speed in Communicating

n	\bar{x}	S	N	μ	σ
6	0	10.9	114	12.6	15.2
20	3.2				
22	7.0				
26	7.4				
4	9.8				
16	20.4				
22	31.1				

$$R = 72\%$$

TABLE 36g

Frames of Reference

n	\bar{x}	S	N	μ	σ
2	0.20	0.15	24	0.17	0.18
2	0.44				
5	0.16				
7	0.14				
5	0.21				
3	0.97				

$$R = 83\%$$

TABLE 36h

Educational Level

n	\bar{x}	S	N	μ	σ
9	14.1	1.2	84	13.1	2.5
18	14.1				
13	13.9				
19	12.6				
4	14.2				
9	11.9				
12	11.3				

$$R = 48\%$$

TABLE 36i

Managerial Style

n	\bar{x}	S	N	μ	σ
6	39.7	10.2	60	44.0	28.4
10	36.2				
11	47.4				
13	56.2				
2	53.0				
8	49.5				
10	27.4				

$$R = 36\%$$

TABLE 36j

Frequency of Communication with Immediate Superior

n	\bar{x}	S	N	μ	σ
5	11.8	1.9	57	12.6	4.7
10	10.1				
11	12.1				
13	13.7				
8	15.6				
10	12.0				

$$R = 40\%$$

APPENDIX 41Covering Letter to First Report

Tel: 031.667.1011
Ext. 6577

Department of Business Studies,
William Robertson Building,
50 George Square,
Edinburgh, 8.

2nd May, 1969.

Mr. J.A. Bloggs,
Managing Director,
Crunch Machines Ltd.,
Queens Industrial Estate,
Newtown,
North Lothian.

Dear Mr. Bloggs,

I enclose a copy of the first preliminary report on my communications study. Also enclosed is a list of the managers/supervisors who completed the questionnaires - I am sure that they would be pleased to see some result for the time they gave to help me.

Because of the help given and the insights gained, I believe I have a marketable commodity in my communication measurement technique. I hope that this first report goes some of the way to repay your helpfulness and express my gratitude.

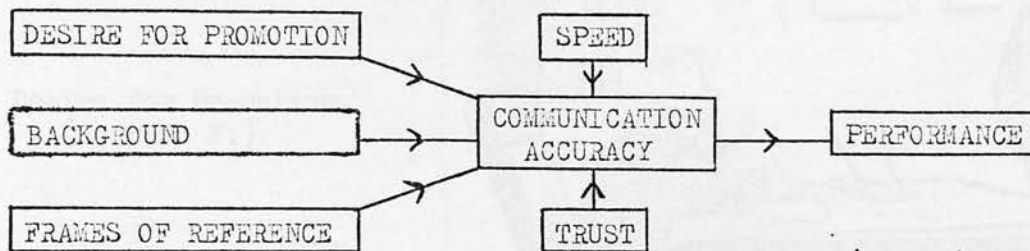
Yours sincerely,

T.M. LILLICO
Research Fellow

APPENDIX 42MANAGEMENT COMMUNICATIONS STUDYFirst Report - Interpersonal Factors.

The subject of communications in business and industry is the focus of a good deal of current interest and discussion. Unfortunately many theories about the complexities of information exchange in organisations are sketchy and incomplete. Though much has been written and discussed, few of the underlying assumptions have been very systematically examined.

This report examines some of the personal factors affecting the accuracy of upward communications in an industrial setting and looks at the results of communications effectiveness in terms of individual performances. The variables examined are represented diagrammatically below:



Both the firms and the individuals involved were selected randomly from the electronics industry. Some 7 firms (out of 13 approached) agreed to take part in the study from which 64 pairs of immediate superior/subordinate managers were requested to fill in parts of the attached questionnaire.

Briefly, the results indicate that while most of the managerial pairs communicate with a certain degree of effectiveness (only 10% of the pairs exhibited actual misunderstandings), the general level of effectiveness shows considerable room for improvement. Specifically the findings of the research demonstrate that lack of trust, desire for promotion and lack of interest in other people's views all militate against accurate upward communications. These results are discussed in more detail below with descriptions of the various measurements obtained from the questionnaire.

Accuracy of Upward Communication (Questionnaire Section C).

Set lists of job problems were rank ordered by the subordinate, according to the difficulty the problems caused him. His immediate superior also rank ordered the same lists according to his estimate of the difficulty the problems caused his subordinate. A statistical comparison of the two rankings gave a measure of the agreement or disagreement over the subordinate's problems.

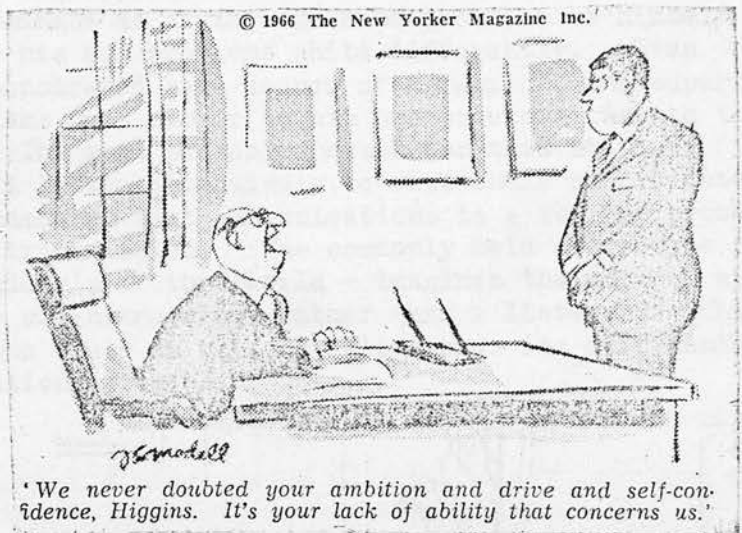
Most of the managerial pairs (90%) demonstrated some degree of agreement.

Interpersonal /

- 2 -

Interpersonal Trust (Section D).

No study of communications can afford to ignore this factor. Perhaps the most commonly held belief about communications is that communications cannot be really effective or accurate unless they occur in an atmosphere of trust and confidence. This study confirmed this commonsense theory statistically (10 to 1). * That is, subordinates who rated their superiors highly in Section D, produced higher communication scores than those subordinates who rated their superiors low in this section.

Desire for Promotion.
(Section F.)

Many people have suggested that the more subordinates value promotion, the less accurately they will pass up information about problems which might reflect badly on their promotion prospects.

The results confirmed (13 to 1) the belief that those subordinates with a strong desire for promotion tend to withhold, restrict, or distort information about their job problems more than subordinates with a weaker desire for promotion.

Frames of Reference (Section C).

Perhaps the simplest way of defining a frame of reference is to look upon it as a background of opinions based largely on personal experience. Frames of references are continually used to make everyday decisions. For example when about to step off a pavement most people look to the right, whereas continentals look to the left first. Almost unconsciously the experience of living with certain types of traffic systems creates a frame of reference which is /

* These figures refer to the odds against this result being accidental. Thus the higher the odds the more important is the result, rather like a football score.

- 3 -

is often difficult to throw off when conditions change e.g. going to the continent on holiday.

In the context of this study, how does the way a superior see his own problems influence his estimation of his subordinate's problems?

Ideally one would hope the answer would be not at all, that the superior could put his own problems behind him and look objectively at his subordinates individual problems. In fact, the opposite seems to be the case. The superior tends to see the subordinate as having the same problems as himself whereas the subordinate may see his own problems quite differently. Even though most of the managers demonstrated some degree of agreement, the superior's view of his subordinate's problems were closer to his own problems than to those of his subordinate (10 to 1). The most probable reason for this state of affairs, is that superiors don't listen attentively to what their subordinates have to say. It should be remembered that communications is a two way process with receiving as important as transmission. The commonly held stereotype of the executive - the Sir John Wilder's of this world - imagines the manager as a dynamic, often aggressive giver of instructions rather than a listener. This research shows that there is some truth in this but also shows its detrimental effect on the two way communications process.

Background
(Section B).



"It took my family three generations of toil and sacrifice to become middle-class and now it's a dirty word"

Educational and social snobbery have been a source of argument in Britain for generations. One could imagine that these supposed barriers would affect communications in industry as much as they are supposed to affect social life. This theory was not borne out in the study. It may be that in electronics it is what you are rather than who you are.

Speed in Communicating.

"My rule was always to do the business of the day in the day."
Duke of Wellington (1769-1852).

The accent so far has been on the accuracy of communications but obviously speed /

- 4 -

speed in communicating is also very important. By comparing the communication accuracy score with the speed with which the questionnaires were completed and returned, the study showed that accuracy and speed in communication go hand in hand. That is, managers who returned their questionnaires quickly tended to score more highly in accuracy than those who took longer to complete the questionnaire (10 to 1).

Performance. Section B.

Having examined some of the factors affecting the accuracy of upward communications, what is the pay-off for the good communicator, does it really make any measurable difference to his career? The simple answer is yes, most definitely.

Whereas a strong desire for promotion does not have any effect on the rate of advancement up the managerial ladder, the good communicators climb faster than their poorer colleagues (14 to 1).

Education plays a large part in this process, the managers having more education achieve faster rates of advancement than their less educated colleagues (100 to 1).

Practical Implications.

Having looked in some detail, at the communications process, how can we make use of the findings to improve industrial communications?

Managers must firstly be motivated to communicate effectively. Perhaps the strongest motivational factor demonstrated in this report is that effective communicators benefit not only the organisation but also themselves.

Accurate and speedy communicators are recognised by their superiors as managers worthy of advancement and they are rewarded by achieving faster rates of promotion than their less able colleagues. It also follows that poor communicators are equally recognisable to their superiors and are less likely to be considered for promotion. If one assumes that promotion is desired by subordinates, then one way of them improving their chances, is for the subordinates to pass up relevant details of their major problems - not to withhold or distort the facts in an attempt to create the 'right impression' with their superior. Apart from the fact that the 'right impression' does not fool superiors, the subordinate who insulates his superior from clear knowledge of work problems, insulates himself from whatever expert knowledge and influence the superior might apply in solving the difficulties.

Why does this condition of withholding or distorting information come about and what can a superior do to alleviate it? Obviously he can do little about his subordinates promotional desires but he can and should be the prime mover in working toward an atmosphere of trust and confidence between himself and /

- 5 -

and his juniors. There are three steps which suggest themselves from this research:

- (i) keeping subordinates more fully informed will gradually remove feelings of mistrust
- (ii) keeping superiors more fully informed will improve one's chances of advancement
- (iii) listening more attentively to what superiors and subordinates have to say will both reduce feelings of mistrust and increase advancement chances.

For effective communications all channels should be used efficiently.

It is a common mistake, however, to think that all organisational ailments can be cured by large doses of official communication. Many well publicised "communication improvement" and "management information" programmes are ineffective because they overload the formal system.

Managers work through people and any communications system should take this into account.

Postscript.

By choice this report has avoided a great deal of detail in the methods used and the other, less significant, insights gained. I have tried to repay some of the debt I owe to the managers who spent their valuable time in helping me, by attempting to be brief and to the point.

I expect to complete a second report on the organisational factors involved in the summer and my complete thesis will be lodged in the University library.

In the meantime, I would be more than willing to answer any questions arising from this report.

T.M. LILLICO
Research Fellow.
May, 1969.

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APPENDIX 43Covering Letter to Final Report

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Department of Business Studies,
William Robertson Building,
50 George Square,
Edinburgh, 8.

18th July, 1969.

Mr. J.A. Bloggs,
Managing Director,
Crunch Machines Ltd.,
Queens Industrial Estate,
Newtown,
North Lothian.

Dear Mr. Bloggs,

I enclose a copy of the second (and final) report on the communications study. Also enclosed is a list of the managers/supervisors who completed the questionnaires - I'd be very grateful if you could circulate the report among them.

Without the support of yourself and the managers this research would have been impracticable - I'd like again to express my thanks.

If there are any questions arising from the reports, please do not hesitate to contact me.

Yours sincerely,

T.M. LILLICO
Research Fellow

APPENDIX 44MANAGEMENT COMMUNICATIONS STUDYFinal Report - Organisational Factors

This report examines some of the organisational factors affecting the accuracy of upward communication within 7 electronics firms which took part in the study.

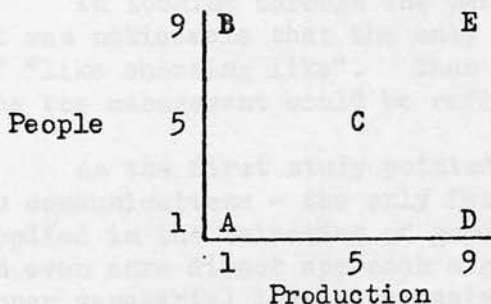
Briefly, the results indicate that although all the firms communicated with a certain degree of effectiveness, the differences between the firms were quite marked. By comparing the firms, the degree to which organisational factors were responsible for good or bad communications, could be calculated and the practical implications of this analysis are discussed in detail below.

Managerial Style¹

Among the findings of the first report, perhaps the one of most importance was that good communicators achieved faster rates of promotion than their less able colleagues. (14 to 1)²

In which ways do these managers differ?

Probably the two most important dimensions of the management function are the concern for production and the concern for people. Representing this in diagram form it becomes a grid of Managerial Style where:



"... And we find a great improvement in employee efficiency since we abandoned our 'happy family' policy for a 'dog-eat-dog' policy!"

9 represents high concern
 5 " medium "
 1 " low "

While a book by management consultants, Blake & Mouton³ goes into more detail, a simplified description of the styles might be:

1. Questionnaire Section F, Questions 3, 4, 6 and 8.
2. These figures refer to statistical tests which give the odds against this result being accidental.
3. "The Managerial Grid", Gulf Publishing Co., 1964.

- A (1, 1) an apathetic manager who has no concern for production or people, he often works by the rule book and will usually only do work prescribed by the organisation.
- B (1, 9) a 'human relations' man who feels that production targets and the like, consistently interfere with the good relations he tries to maintain with both superiors and subordinates.
- C (5, 5) an 'organisation' man who compromises and shifts his stance according to the pressures or politics of the time.
- D (9, 1) a 'systems' manager who believes that people are only being retained until machines can replace them. Subordinate functions are seen as holding ones and the 9,1 manager continually attempts to reduce the human side of his subordinate's tasks by installing mechanistic systems.
- E (9, 9) a balanced style in which the managers (unlike all the other styles) see no conflict between production and individual objectives. By attempting to maximise contribution and achievement, understanding and commitment, common objectives are sought.

The relevance of systemising styles is seen in the performance and communicating ability of the managers involved in the study. The fastest rates of advancement were found in the 9, 9 style of management and the lowest in the 1, 1 style (17 to 1). Similarly, communication accuracy was highest among 9, 9 managers and lowest with their 1, 1 colleagues (8 to 1).

Recruitment

In looking through the personal characteristics of the firms' management, it was noticeable that the only selection criteria they had in common was that of "like choosing like". Thus the social background or type of schooling of the top management would be reflected in the junior management.

As the first study pointed out, differences in upbringing have no effect on communications - the only factor uncovered in this study which could be applied in the selection of good communicators is that of educational level. An even more direct approach might be to select high performers for middle and upper managerial levels, especially where communicating ability is essential.

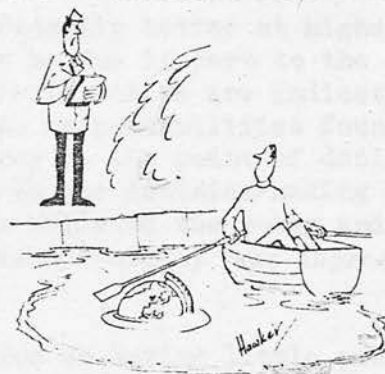
Training /

Training

Contrary to many industrialists beliefs, superiors who had not previously held their subordinates' job, achieved higher communication scores than those managers who had (20 to 1). It would seem that the frame of reference of the superiors who have had intimate experience of their subordinates' job, is more rigid than that of the inexperienced manager. Perhaps the extra effort involved in trying to understand the subordinates work and problems - the need for the inexperienced manager to put himself in the subordinates place - is the reason for this finding.

JOB ROTATION ??

"Hand me that instruction book."



"When do you think you'll be ready for the real thing?"

The ability to look objectively at the problems of others - problems which may affect ones own work - is known to be rare. This factor has not escaped the attention of industry and explains the sound base to job rotation, role playing and case study training for management.

Simultaneously with the growth in the ability to see the other man's point of view - to understand his role and predict his attitudes, will come the skill in redefining apparently conflicting aims in terms of common goals - the 9, 9 managerial style.

Delegation /

Delegation

Communication accuracy was found to be significantly better at higher levels of the firms (100 to 1). Although this may be due in part to the ability of the men who have reached these higher levels, there are indications that another factor may be the greater authority and responsibilities found at these levels. This brings the subordinate nearer to the point of decision-making and can increase his sense of participation in the decision-making process. Even at lower levels, where subordinates believed the power and influence of their superiors to be high, communication accuracy was improved (100 to 1).

Where subordinates see their immediate superior as having little power to assist them in their work problems, they tend to bypass him to reach his superior (33 to 1). That this results in loss of face, is mirrored in the lower trust resulting (100 to 1).

To counteract this tendency and to increase the sense of participation, power commensurate with responsibilities could be delegated to lower levels of the organisation. Good communications are as vital at the bottom of an organisation as at the top.

Feedback

Without feedback on his performance, the subordinate will find it difficult to control or correct his behaviour. When performance is an important factor in promotions and salary increases, this "non-feedback" may lead to feelings of insecurity and distrust of the immediate superior.

As might have been expected therefore, the firms with the most formalised systems - performance appraisal with the subordinate present - had the highest trust scores of all the firms. Furthermore, only in these firms did all the subordinates believe that their superior was the person most in touch with their problems - an indication that they felt the feedback system to be working both ways.

However, even with this system, there was some reluctance on behalf of the superiors, to take the role of "the headmaster" with their subordinate colleagues.

Again the basic problem may be one of managerial style. When the superior believes that the aims of the organisation and the subordinate can meet, he can more easily take the step of allowing the person who usually knows most about the tasks under discussion (the subordinate himself) to take a major part in deciding what should constitute good performance and what bad.

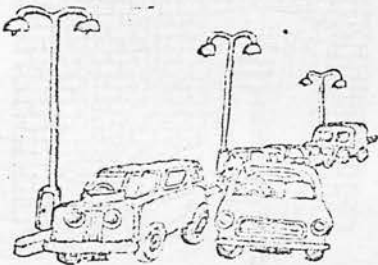
As this sort of participation should make the subordinate feel closer to the decision-making point, any inadequacies in the authority and responsibilities of the /

- 5 -

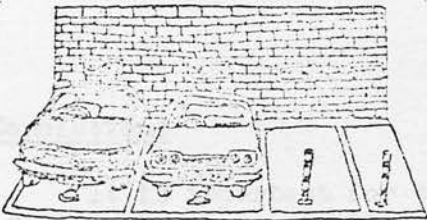
of the superior may be high-lighted in the eyes of the subordinate. Thus one type of organisational change might precipitate another. One of the main advantages of feedback at all levels, is that weak points may be brought into clearer perspective and corrective action taken.

Status Symbols

The status symbols so common in British Industry - the executives dining-room, the carpeted floor - are presumably part of a reward system for better performance. Unfortunately this theory did not hold among the firms studied. Those firms with an elaborate "perks system" had managers of no better past performance than firms with few status symbols.



Pot-luck parking



Car park - reserved place

The elaboration of the status system had only adverse effects among the firms studied. The desire for promotion (at the expense of obtaining more creative work, long term training etc.) was greater as the elaborations increased (50 to 1). It was pointed out in the first report that strong promotional desires of this sort, can cause subordinates to restrict adverse information in attempting to create a "rosy picture" to their superiors (13 to 1).

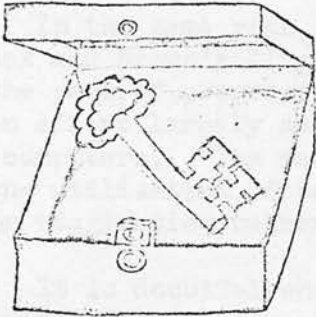
Firms with an intricate "honours" system thus tended to create managers with stronger promotional desires. If these managers experience little promotion, then a mis-match of need and achievement may occur. To avoid considerable dissatisfaction an alternative outlet may be sought.

One substitute for upward movement can be upward communication. Whereas managers with little mis-match of need and achievement kept their communications to reasonable levels, managers with a greater mis-match communicated more frequently with their superiors, especially

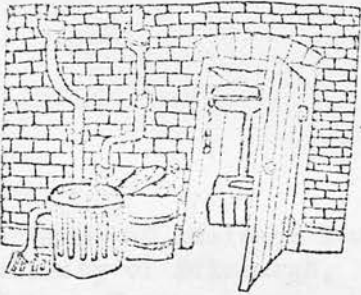
by establishing the well known "paper-work" empires (14 to 1).

Although /

- 6 -



Key of directors' toilet



Bog in the yard

Although this study did not extend to the shop floor, workers in this age of higher education, have severely limited promotional chances. If they have similar desires for advancement as do managers then these desires may be increased by elaborate status symbols devised primarily for management. One form their substitute might take could be stronger demands for wage increases and industrial recognition e.g. in the form of trade unions.

It would seem easier for firms setting up new plants, to start operations with a "classless" factory. It was, however, very noticeable that the older plants had more elaborate perks systems than younger factories (100 to 1). This finding may suggest that the pressures to add to existing status systems become progressively harder to resist.

Conclusions

It is important for the manager who is concerned about the development of effective communications within his organisation to take into account the various factors that aid or impede communications.

Although the subject is a complex one, the two reports have high-lighted some of the important factors and shown their inter-relation. Often, a breakdown in communication is dismissed as arising from ignorance, inattention or ill-will, when the true cause may be that the manager has not taken the trouble to diagnose his communication needs and to plan for their effectiveness.

In the /

- 7 -

In the same year, technology has celebrated the 50th anniversary of Alcock and Brown's flight across the Atlantic and put men on the moon - such is the pace of progress. One of the traditional resources of management - human effort largely as a source of labour - is being replaced by automation and computers. The manager of tomorrow will come, more and more, to concentrate on the utilization of people through their ability to think, innovate and to bring imagination rather than physical energy to their jobs.

It is doubtful whether machines will ever be able to co-ordinate these activities far less replace them. This function will remain the manager's and his effectiveness will depend on his communications skill.

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APPENDIX 51Definition of Terms as used in this Study

- ATTITUDE - an enduring organisation of perceptual, motivational, emotional and adaptive processes centering on some object in the person's world.
- CHANNEL - the means of passing or conveying a communication.
- COGNITIVE DISTANCE - the amount of separation between two frames of reference.
- COHESIVENESS - the perception of belonging to.
- COMMUNICATION - the conscious or unconscious attempts to pass messages between a transmitter and a receiver.
- COMMUNICATION ACCURACY - the degree to which the superior's assessment of his subordinate's problems matches his subordinate's views of his own problems.
- COMMUNICATION EFFECTIVENESS - the degree to which communication is accurate, brief and speedy.
- COMMUNICATION NET - the geographic directions of communication activity.
- COMMUNICATION PROCESS - a number of individual communication acts making a completed dialogue.
- CONFLICT - the experiencing of two or more simultaneous motives requiring incompatible actions.
- CONTENT - the topic of the communication.
- EMPATHY - feeling the same emotion that is being expressed by another person.
- FEEDBACK - communication from the receiver to the transmitter concerning the accuracy of the original communication.
- FORMAL COMMUNICATION - the communication required by the system (after Head, 1964).
- FRAME OF REFERENCE - the background of stimulation which influences behaviour in particular situations. It may include internal or external stimulus other than the outstanding ones. It may include ideas or memories such that the effects of any given stimulus upon a person are not independent of the effects of other stimuli (Sherif & Sherif, 1956, p. 41).
- INFORMAL COMMUNICATION - the communication other than formal communication.

- LEVEL OF ASPIRATION** - the standard of performance which the individual sets for himself in a given goal-directed activity. Feelings of success or failure are determined by the relation between the level of aspiration and the subsequent level of performance.
- LIKERT SCALE** - an empirically derived attitude scale consisting of many items referring to the same attitude. To each item the respondent indicates whether he strongly agrees, agrees, is undecided, disagrees, or strongly disagrees. These responses are scores 5, 4, 3, 2 and 1 respectively. His attitude measure is given by the sum of all the scores.
- MEDIA** - see CHANNEL.
- NOISE** - that which interferes with transmission or reception.
- PITCH** - the structuring of a communication (e.g. in terms of difficulty, length, interest, etc.).
- PREDICTION** - refers to problems in which the individual seeks to anticipate what will happen, given certain conditions.
- PROJECTIVE TECHNIQUE** - a method intended for the measurement of deeper-lying tendencies in the person not readily ascertainable through more direct methods. Consists in the presentation of weakly structured or ambiguous stimulus materials into the perception and interpretation of which the perceiver is said to "project" tendencies of which he may be unaware.
- RATIONALISATION** - a defence mechanism in which the person through cognitive distortion may find false but "good reasons" to justify his present situation.
- RECEIVER** - the place to which a communication is transmitted and accepted.
- REDUNDANCY** - the repetition of any part of a communication.
- ROLE** - a pattern of behaviour characteristics of an individual occupying a given niche in society or fulfilling a specified function.
- ROLE PLAYING** - predicting the responses of others.
- SELF ACTUALISATION** - the notion, embodied in various theories of personality, of a basic human tendency toward maximal realisation of one's potentialities.
- SOCIOMETRIC** - a method of determining the interrelationships among members of a group in terms of feelings of attraction and rejection. Each member privately specifies what other members he likes, etc. and which ones he wishes to avoid. From these responses it is possible to construct a "social map" of the group called a sociogram.

STEREOTYPE - refers to a belief or attitude which is widespread in society, often oversimplified in content, in which the unique attributes of the object are not observed, and which is resistant to change.

TRANSMITTER - the place from which a communication originates.